Root Grafting.

SEVERAL correspondents have requested our opinion concerning the respective merits of root-grafting and budding or stock-grafting, in the propagation of apple trees. A considerable degree of interest has recently been awakened on this subject, from the fact that at the late meeting of the North-Western Pomological Association, held at Dixon, Ill., it was a prominent topic of discussion, and elicited a variety of opinions and experience among the nurserymen and orchardists of the west, to which we shall presently allude. Before proceeding further, it may be well to explain precisely what we mean by root-grafting. It is a very common practice among apple tree growers, and especially when stocks are scarce, to cut the roots of seedlings into sections or pieces two or three inches in length, and graft on these; thus making three or four trees of one root. But this is an abuse of root-grafting, and should not be recommended or practiced under any circumstances, although we admit that good trees are grown in this way, of some very free, vigorous growing varieties. What we intend to speak of as root-grafting, is that in which the upper portion of a seedling root only is used, and the graft or scion inserted on the collar, or point of union between the root and stem of the plant.

In the Western States, the fresh and wonderfully fertile soil produces a rank and rapid growth of trees, and this continues unabated until a very late period of the autumn. Winter sets in upon these soft and succulent trees with the most sudden and violent changes of temperature—during the day a clear, bright sun, gives almost a summer warmth, while at night the mercury descends to zero, and even, in many cases, far below. This, it must be admitted, is a trying state of things. The upper parts of the trees seem to escape any very fatal injury, partly perhaps because they are gradually thawed by the gently rising heat of the morning, while at the surface of the ground the greatest injuries are sustained, owing perhaps to the sun striking that part from a greater altitude and from the heat reflected against it by the warmed surface of the ground. At that point, the bark is blackened and ruptured. Certain varieties are peculiarly liable to this, especially late growers. The *Roxbury Russet* and *American Golden Russet* are quoted as examples; but the *Baldwin*, *Greening*, and many others, are occasionally so affected, in proportion, probably, as the soil may be favorable, or otherwise, to the production of a late immature growth.

Now it is very evident that root-grafting is not a safe method of propagation for such varieties as are liable to these injuries in winter, but that they must be budded or grafted on stocks at such a distance from the ground as will place them beyond the reach of this influence. There can be no diversity of opinion on this point. The question of practical interest is, which are tender varieties and which are not? and this must be answered by experience. We apprehend that the soil has very much to do with this matter. It is quite possible that some of the varieties complained of as

being liable to winter-killing would entirely escape on a dry, elevated soil, where the growth would be moderate and the wood consequently well ripened. But people must take the soil as it is, and adapt their system of cultivation to its particular characteristics.

We suspect that in the West root-grafting is too often performed by using pieces instead of whole roots, and this accounts for trees — as spoken of in the Dixon Report — requiring the support of stakes for several years in the orchard. It is a fact, that trees propagated in this way do not produce a well proportioned development of roots. It is not uncommon to see such trees seven or eight feet high with only three or four prongs of roots, a few inches long, that one could hardly suppose capable of supporting such a growth of top; but trees propagated on whole roots are seldom if ever found in this condition.

As far as tardiness of bearing and unproductiveness are charged upon root-grafting, a pretty long and extensive experience compels us to regard it as an error; on the contrary, we have found that root-grafted trees, as a general thing, are, if anything, more fruitful than budded ones. It is quite common to see three or four year old root-grafted trees of certain sorts produce fruit in the nursery rows. Where in the world can more healthy and productive apple orchards be found than in Western New York, where ten years ago such a thing as budding or stock-grafting apple trees was scarcely thought of, and which to this day is practiced only on a very limited scale, for certain weak-growing sorts.

Mr. Hovey says: "We have long been convinced that it was a perfect waste of time and money to plant root-grafted trees, and were satisfied that cultivators would find it out in time. We knew it was useless to offer any advice upon the subject, as it would be considered quite gratuitous. To tell a man that a budded or grafted stock was worth double the price of a root-grafted one, would only create a laugh at our expense. We therefore thought it best to let those who estimate the value of a tree by its cheapness try the experiment fully and realize the truth of the adage, 'a fool and his money,'" &c.

Mr. Hovey has been at length induced to say this, even at the hazard of being laughed at, on account of the objection raised against root-grafting in Illinois. But will Mr. Hovey be kind enough to explain to his readers wherein the superiority of budded or stock-grafted trees lies? We are all seeking light, and it is not enough to tell us we have been fools to throw away our money on root-grafted trees, but we must be told *why*. Will he point to the orchards of Western New York, where there are the most ample illustrations of root-grafting to be found in the world, we are very sure? Will he point to the apple nurseries of Western New York, in which there are at this moment *millions* of root-grafted apple trees? He will find no proofs to suit him here. The apple nurseries and orchards of New York, root-grafted as they nearly all are, are generally regarded as equal, if not superior, to any others in this country. We think Mr. Hovey has himself spoken very favorably of the orchards of New York. At any rate we should be glad to know where there are better orchards, owing their superiority to budding or stock-grafting.

We are very confident, however, that Mr. HOVEY does not speak from experience. We once entertained opinions of root-grafting much the same as his, but it was from the want of experience, and we apprehend that some of our western friends are pronouncing too hastily, even there, where, as we have shown, serious and well founded objections to it do exist.

For the purpose of showing what opinions prevail there, we shall quote the whole discussion of the subject at Dixon, and not what one individual said, as our friend HOVEY has done:

"*Swaar.*—Mr. WILLIAMS—Has seen a case parallel to the one just mentioned of the *Baldwin*.

"Mr. BRAYTON—Had seen it bear well both root and stock-grafted.

"C. BRYANT—Thinks it should always be worked on very thrifty seedling stocks at standard height.

"Mr. PHŒNIX—Has several root-grafted; tops appear stinted; bears well; fruit of an excellent flavor.

"A. BRYANT—Has several trees budded standard high, very productive, rather deficient in roots; has staked some trees three years, now appear firmly rooted.

"Mr. MCWHORTER moved to recommend as best in quality of fruit, for limited cultivation. Lost.

"A. BRYANT moved to recommend for general culture when worked at standard height on thrifty seedling stocks. Carried unanimously.

"Mr. WILLIAMS was called on to give his views more fully on the advantages of stock-grafted or budded trees over root-grafted.

"Had paid attention to it for several years; this year had spent much time in visiting orchards and making observations. He believes that for the orchards, trees worked standard high are better worth one dollar a tree than for them to plant root-grafted trees, receiving them and a dollar with each tree as a gratuity. Has found our shy bearers, as *Early Harvest*, *Pryor's Red*, &c., to bear well when stock worked. To the rule he finds general, there may be some exceptions.

"Mr. BRAYTON—With him some varieties bear as well root-grafted as budded; some of our cultivated varieties are more hardy than the average of seedlings; such should be root-grafted.

"Mr. MCWHORTER—Some varieties, that are very hardy on roots, are poor bearers.

"Mr. PHŒNIX—Has paid much attention to the subject under discussion; believes that working scions from nursery trees is bad policy; attributes much of the complaining of unproductiveness to this cause; has facts to sustain him. Believes some varieties will prove quite as productive root-grafted as budded, and that some seedling stocks would produce unproductive trees. Recommended raising stocks from seed taken from productive, thrifty seedlings. Thinks it is too soon to decide entirely against root-grafting.

"Mr. AVERY—Had taken buds from nursery trees and had them bear the first year; believes if we take two five year old thrifty seedlings, graft one in the root and bud the other, the grafted one would bear as soon as the other. Believes checking the growth by budding on unthrifty seedlings causes early bearing.

"C. R. OVERMAN—Concurs in the opinion just advanced by Mr. AVERY.

"Mr. FINLEY—Attributes the tardiness of bearing in root-grafted trees to their thrifty growth; has seen blossoms on trees first year, grafted, scions from nursery trees; the young tree, however, was not healthy.

"Mr. TOLMAN—Knows of no objection to root-grafted trees. Could not sell budded trees in his vicinity; people object to them on account of their sprouting from the stock.

"Mr. SHAW—Most of those who have taken part in the discussion, admit that budded trees bear best when young; would like to know if they depart from their accustomed ways when old?

"C. R. OVERMAN—The only objection he knows of against budded trees, is that the stocks are frequently allowed to become too large before budding; at the point of union between the bud and stock the wood becomes defective, and the trees in consequence are short lived.

"Mr. WILLIAMS—We plant trees, hoping to eat fruit. I find budded trees to bear good crops six to eight years the soonest. People will soon learn that budded trees are earlier in bearing, and nurserymen will find it to their interest to raise budded trees, though it does cost more than root-grafting.

"After some desultory discussion, moved that we recommend budding or stock-grafting as preferable to root-grafting, (on sections of roots) for general use. Lost by 16 to 14. The subject being new to many, they did not consider themselves prepared to vote.

"C. R. OVERMAN—Would root-graft largely of some few varieties.

"On motion, adjourned to half-past one o'clock, P. M."

Now this is not a very strong expression against root-grafting even in Illinois; on the contrary, the weight of opinion is in favor of it. Mr. PHŒNIX, whom we consider one of the most observing and intelligent nurserymen in the West, thinks it too soon to decide against root-grafting, and we entirely agree with him.* Mr. C. R. OVERMAN, whose apple tree culture is probably the most extensive in the Union, "would graft largely of some few varieties." This is the right spirit and the right principle. *Root-grafting* is not applicable in all cases in any locality; for instance, here, such feeble growing sorts ae *Porter*, *Early Joe*, *Melon*, *Red Canada*, &c., are usually budded on strong stocks that will force up a vigorous shoot the first year; but such as *Baldwin*, *Northern Spy*, *Fall Pippin*, *Greening*, *Gravenstein*, *Fameuse*, *Red Astracan*, and all those strong, rapid growing trees, succeed well grafted on roots and make large and beautiful trees for orchards at three years' growth.

Is there any argument in theory against root-grafting as a means of propagating? Any reasons, grounded upon vegetable physiology, why a sound, healthy scion, inserted on a young and healthy root, should not make a good tree? We know of none. Indeed, it is one of the most complete and rational modes of propagation that we know of, but it must be properly performed. We are very well aware that there are many very worthless root-grafted trees grown and sold, and so there are of budded ones. Every mode of propagation is abused by careless, unskilful persons; but this constitutes no argument, one way or the other.

The tree-grower has a right to study economy in the propagation of trees, as well as people in other pursuits, and root-grafting recommends itself particularly by its economy. It is, or can be, performed in the leisure of winter, and thus the nurseryman is enabled to employ his workmen, who would otherwise be idle, and he is also able to give his attention to the propagation of other trees in the budding season.

* Since this was written, we have received a communication on this subject from Mr. PHŒNIX, which will be published in our next number.

It is a system peculiarly adapted to this country, where trees must be grown cheap and on a very extensive scale.

Top-grafting, in the propagation of young trees, is generally avoided by all good practical nurserymen, and for good and sufficient reasons. It very often happens that there is an inequality of growth between the stock and graft that becomes at once unsightly and injurious to the prosperity of the tree. Besides, it often provokes unnatural precocity that hastens the tree to a premature death. In certain cases, however, it becomes necessary, as in a climate like that of the West, with certain varieties, as in the case of very slender and straggling growers, of pendulous varieties, &c. Aside from such exceptions, it may be regarded as an axiom in propagation, that *the earlier and the nearer to the root* the union is formed between the stock and graft, the more perfect the union will be and the more healthy and durable the tree.

Budding is, of all other modes, the most extensively practiced, if we except the propagation of American apple trees. It is a complete and beautiful system when well done; but, unless in such cases as we have excepted for grafting, it should be done as near the ground as possible. The younger and more vigorous the stocks be, the more desirable will be the tree. Much depends upon the selection of scions, and we fear that some of the worst results we hear of in the West arise from using pithy, ill-matured scions. We have just received a parcel of scions from Illinois, of four or five different varieties, and we find them so spongy and pithy that we should never use them with a view to obtain sound, hardy trees. Even the base of the shoots are unfit for use, and we suspect that a very large number of the scions used in the West are of a similar character. It may be well for Western tree growers to look into this, and it deserves consideration everywhere.

DENWOOD,*

THE RESIDENCE OF JOHN JAY SMITH, ESQ., GERMANTOWN, PA., NEAR PHILADELPHIA.

THE private residence of which we give a drawing in the present number, presents some peculiarities of construction and interior division, which we have thought might prove a useful study to those who are about to build.

It is a complete *rus in urbe;* the kitchen being *in* the village, and the opposite or piazza side, facing the northeast, for summer afternoon shade, overlooks the country, with a fine belt of trees within a suitable distance. The amount of ground attached is two acres, but we observed that it is filled with the most valuable hardy trees and shrubs, imported and domestic. Among the former will be found a fine collection of Hollies and Rhododendrons—two important but much neglected families of plants.

The first thing that strikes the eye in looking at this house, is the circular hoods in the attic story—a contrivance which gives height to a considerable portion of the rooms, and has externally a good effect. The attics are in fact as good rooms as need

* See Frontispiece. EXPLANATION.—1, Entrance Hall. 2, Butler's Pantry. 3, Dining-Room. 4, Library. 5, Private Office. 6, Piazza. 7, Kitchen, with summer do. attached. 8, Drawing-Room. 9, Pantry. 10, Closet.

be asked—superior to any we have seen in dwellings of the same elevation. A front portico, and two projecting bay windows, make not only a cheerful entrance, but add materially to the size of the drawing and dining rooms. The portico, as well as the interior hall, are paved with tesselated tiles, made by MINTON & Co., Stoke-upon-Trent, England, which are now becoming so much appreciated, and which can not be too much known.

The interior of the house is divided in a different manner from most dwellings, as will be seen by a glance at the ground plan. The hall is carried only to the depth of the drawing room, where by an ornamental ground glass door it opens upon a neat library having a bay window slightly enriched at the top with colored glass; so that the view through the library door and the bay window beyond, produces an effect like that of an oratory. The book-cases on one side are recessed into the butler's pantry, so as to occupy no space from the room. The two doors in the octagon corners are filled with book backs, bound on blocks to form a perfect representation, and to furnish the room—a plan much practiced in Europe. These doors open respectively into the butler's pantry and the private office beyond the drawing-room. Three good and useful rooms are thus obtained. The pantry is a low story; above it is the bath-room, &c.; and above that a convenient chamber; making three stories in the part of the house nearest the kitchen. The dining-room, on the left of the hall, enlarged by the front projecting window and a handsome bay window at the side, is large and convenient. Behind the fire-place are closets beyond the walls of the house, and entered respectively from the side bay window and the dining-room. They are of a comfortable temperature in the coldest weather, being behind the chimney. The staircase has been thrown out of sight in the passage from the hall to the kitchen, and being unin-closed has a light and airy appearance.

The whole house is tempered by a furnace, made to warm all the rooms if required, as well as the hall. In every way advantage has been of space, which is saved wherever it was possible. As examples, we noted that under the chamber windows drawers are let into the stone walls, for shoes, &c.; in the library is a concealed umbrella closet; and between the book-cases a long closet in the pilaster, for drawings, or spy-glasses, &c. Both hydrant and rain water are plentifully supplied to the house and grounds, in which are also two pumps, a gardener's lodge, convenient stables and coach-house, &c., &c.

The spot on which this house is erected was two years ago a stable-yard. The visitor will be struck with the transformation that has been already effected. When Mr. SMITH's numerous fruit and ornamental trees have had a few year's more growth, we hope to visit it again, and have no doubt of being able to call it one of the handsomest and most convenient places in Pennsylvania, where, by the way, much good taste is growing apparent.

The house was designed by an English architect to combine all the comforts collected in a compass of 42 by 36 feet; the design was carried out and improved by THOMAS U. WALTER, Esq., the architect of Girard College, and now superintendent of the Capitol extension at Washington.

ANNUALS, AND THEIR CULTIVATION.*

CALANDRINIA.—The ornamental species belonging to the genus *Calandrinia* are mostly natives of South America, and like the Mignonette are shrubby plants there, though with us, and also in Europe, they are treated as annuals. The name *Calandrinia* was given to this genus in honor of L. CALANDRINI, an Italian botanist. Few flowers have a more striking effect than the little *Calandrinia speciosa*, (of which the accompanying engraving is a very good representation,) with its brilliant dark crimson flowers peeping out from its thick and beautiful bed of leaves. The flowers open in the morning, and present as rich a mass of foliage and flowers as can be desired; but by three o'clock in the afternoon every little flower is closed. With the exception of the early closing of the petals, this species deserves to be generally cultivated, as nothing can exceed the rich velvety look of the flowers. It is quite hardy, a true annual, and ripens its seeds in great abundance. It is a native of Northern California, whence its seeds were sent to England in 1832, by DOUGLAS. It should be sown in dry and exposed situations, where it can have abundance of light and heat; as the situation in which DOUGLAS found it was a hot, dry bank. It requires very little water, and flourishes best in weather when most other plants are burnt up. It is well adapted for rock-work. It may be sown two or three times during the season, and at any time from April to July.

CALANDRINIA SPECIOSA.

THE MALOPE GRANDIFLORA, or large-flowered Malope, a correct drawing of which we give, taken from our growth of last season, is really one of the most showy annuals

* Continued from April number.

MALOPE GRANDIFLORA. NEMOPHILA MACULATA.

that adorn our garden. The plant grows from three to four feet high, and a bed covered with its blossoms and no less beautiful buds is an object of no ordinary beauty. It belongs to the *Malvaceæ* family, several members of which are to be found in our fields and road-sides.

NEMOPHILA MACULATA.—This beautiful little plant is a native of California, where it was discovered by Mr. HARTWEG, during his mission in search of new plants for the London Horticultural Society. The plant is of a procumbent habit, like that of *N. insignis*, and the whole plant is clothed with short spreading hairs. The flowers grow from the axils singly, on stalks longer than the leaves, and are the size of the drawing, whitish in their ground color, and each lobe of the corolla tipped with a large deep-violet botch, which, when perfect, gives the flower a showy and rather peculiar appearance. It blossoms freely, and is in every way worthy of cultivation.

This plant prospers best in a rather shady situation, as they sometimes die when exposed to a hot sun on a dry soil, in consequence of the drying of the slender collar; though *N. maculata* is not as liable to receive injury in this way as *N. insignis*. It is well to make sowings several times during the season.

THE ROCKET LARKSPUR—*Delphinium ajacis*.—The Rocket Larkspur was introduced into England, from Switzerland, in 1573, although not supposed to be a native of that country. It is of a compact habit of growth, and its blossoms appear set around the raceme, forming a dense mass of blossom; and its beauty has made it a great favorite for more than two hundred and fifty years.

It requires a rich soil to bring it to perfection, and an addition of leaf mold from the woods will tell a good story when the plants are in bloom. There are few plants that will better reward good culture. The seed should be sown in drills, where the plants are intended to blossom, as they will not bear transplanting. When the young plants come up, they will require but little thinning, and may be left

ROCKET LARKSPUR.

standing within two inches of each other; as from their compact habit they require but little room, and should be seen in masses to produce a fine effect. These plants are of such a neat and symmetrical growth, that any device, such as a name, can be well made with them. The time for sowing is in April.

THE DWARF LUPIN.—*Lupinus nanus.*—The Dwarf Lupin is a very pretty plant, with blue or purple flowers, intermingled with a tint of rose-color and white. Its leaves are cut so as to resemble expanded fingers. It is about a foot in height, and bears long spikes of flowers, as seen in the engraving. The blossoms are of long duration, and this, with its compact habit of growth, makes it a fine plant for masses. The seed should be planted where the flowers are to remain. It is a native of California, and was discovered by DOUGLAS in 1834.

DWARF LUPIN.

PETUNIA PUNCTATA.

THE PETUNIA.—The White Petunia (*P. nyctaginiflora*) is a native of South America, near the mouth of the Rio de la Plata, where it was discovered in 1823. The Purple Petunia (*P. violacea*) was discovered in 1830, growing on the banks of the river Uruguay, Buenos Ayres. As both these plants were readily propagated, both by cuttings and seeds, they soon spread over Europe and America, and now make one of the chief ornaments in all gardens. By hybridization, care in the selection of seeds from the best plants, and general good culture, an innumerable number of good plants have been raised far superior in size and beauty to the original. When a flower of particular merit is obtained, it is propagated by cuttings, and soon disseminated. Those who grow them as annuals in the open ground, should be careful to save seed from

only the best flowers, and it is well to remove all poor flowers from the bed. Among the best Petunias is the one we figure in this article, *Petunia punctata*, as it is of fair form, and of a remarkable color, approaching to blue, with a sort of variegated stripe of white, which forms a pretty contrast with the ground color.

THE BEURRE CLAIRGEAU PEAR.

This is a new French variety, originated by M. Clairgeau, of Nantes, and sent out from the French nurseries in 1848 or '49, we believe. It is a very large fruit, and so far as it has been tested both in Massachusetts and New York, gives promise of being a valuable acquisition. Col. Wilder sent us the following description among his notices of new pears that promise well, but we delayed its publication in order to accompany it with a colored drawing.*

"Size—extra large. Form—oblong, ovate pyriform, outline a little irregular. Stem—short and stout, set obliquely and without much depression. Calyx—open, segments short, moderately sunk. Color—brownish green, coarsely clotted and almost entirely covered with russet, sometimes intermixed with dull red on the sunny side. Flesh—melting and juicy, with an agreeable sub-acid flavor, resembling the *Baronne de Mello*, but with more aroma. Class—good; will probably prove *very good*.

"The *Beurré Clairgeau* has fruited in several gardens in the vicinity of Boston and New York, and promises to be a great acquisition. The tree is a strong, thrifty grower, either on the Pear or Quince root, and comes early into bearing, many trees which were grafted in the spring of 1851 being now full of fruit buds."

Mr. Cabot, President of the Massachusetts Horticultural Society, speaks of it as follows, in *Hovey's Magazine* of March last:

"So far as an opinion, formed by testing one or two specimens and those from imported trees of the first year of bearing, is justifiable, this Pear promises to be, on account of its size, beauty, and quality, a highly valuable acquisition. It is a new Pear, raised from seed by M. Clairgeau, at Nantes, of a yellow russet color, with darker russet specks, and a little red in the sun; very large, with a short, very thick stem; calyx small and open; flesh yellowish white, tender, half melting, of a very pleasant sub-acid flavor, ripening last of October and November; tree a strong grower, wood stout, and appears to come early into bearing."

It was figured and described by Mr. Le Roy, of Angers, in Vol. 6 of this journal. The specimen from which our drawing is taken, was grown by us last season.

* See Frontispiece.

TREES SUITED TO GROUNDS OF ONE TO THREE ACRES.

BY B., LONGMEADOW, MASS.

In the February number of the *Horticulturist*, page 62, I read with pleasure your remarks on the *fitness* and *variety* of trees,—that their size should be so proportioned to the size of the lawn as to admit of a variety of trees of different foliage, shape, and flowers. But you go on to remark that there should be a contrast between the style of the house and the trees surrounding it: *i. e.*, an Italian house, with its graceful lines, should be surrounded with picturesque spiry-topped trees; and the gothic house, with its picturesque gables, contrasted with round-headed, graceful trees. In this you take issue with Downing, who writes very eloquently, and, I think, satisfactorily, on the subject, and gives two illustrations on page 55 of his *Landscape Gardening*.*

A *Virgilia lutea* which five years ago I turned out of a flower-pot into my lawn, and which was then less than a foot high, has now become a fine, flourishing tree of from nine to ten feet high, and I am expecting soon to see it blossom. A Ginko tree near it, though much larger when transplanted, has grown with much less rapidity and inclines decidedly to the picturesque. A Kentucky Coffee tree, ten feet high, transplanted at the same time, has grown but little, owing to the soil, I presume, (a sandy loam,) it requiring a deep, heavy soil.

The following trees are well suited to small grounds of from one to three acres. Many of them admit of being very closely grouped, for the picturesque school, and most of them form graceful trees when allowed to grow singly. All are easily procured of good size, either from the nursery or woods, and that they are all hardy in Massachusetts, at least in the southern part and away from the sea shore, I know from experience:

Medium sized trees.—European Mountain Ash, Catalpa, Umbrella Magnolia, Judas Tree, Scotch Laburnum, Purple-leaved Beech, Japan Ginko, Double-Flowering Cherry, (two varieties,) Osage Orange, Box Wood, and Sour Gum or Peperidge. The two last are natives of our woods.

Pruned and trained as small trees.—The Hawthorne, (three varieties,) Buckthorn, Privet, White Lilac, Purple Fringe, Sassafras, and Moose Wood or Striped-bark Maple, are very ornamental. The two last are natives; the Privet is also occasionally found growing in the woods.

These, with a few shrubs,—the Carolina Large-Flowering Syringa, Common Fragrant Syringa, Persian Lilacs, (purple, white, and cut-leaved,) Tartarian Tree Honeysuckle, White-Flowering Honeysuckle, Purple Fringe Tree, Privet, Dwarf White Horse Chestnut, Indian Currant, (red fruit,) Snow Berry, (white fruited,) Bloody-twigged Dogwood, Japan Quince, (scarlet and white,) Spiræa (half dozen varieties).

*Our suggestion corresponds with the teachings of Mr. Downing, see pages 109 and 110 of the work you refer to. The same principle is taught by every good landscape gardener and every landscape painter. Horizontal lines and flat roofs make a better picture when relieved by erect, conical or oblong-headed trees. We shall soon offer some illustrations on this head.—Ed.

And with the following evergreen trees and shrubs—Hemlock, the finest of native Evergreens and the best for grouping; Norway Spruce, equal to the Hemlock, but as it grows large must be used sparingly, and looks best standing by itself on the lawn; Black or Double Spruce; Arbor Vitæ; Red Cedar; Virginia Red Cedar; Sweedish Juniper; American Holly; Common Laurel; American Rhododendron (*Rhododendron maximum*); and Mahonia or Holly-leaved Berberry, grouped on the lawn, and bordering the entrance road and walks, a small place may be made very attractive, and, as you remark, page 62, a better effect produced than by the use of a few large trees like the Elm.

I would add to the above, two deciduous trees, the European Larch and the Virginia Cypress, which, in summer, have the appearance of evergreens.

HARDY TREES AND SHRUBS—PLANTING AND ARRANGEMENT.

BY WM. W. VALK, M. D., FLUSHING.

As in the animal kingdom man holds the first rank in regard to external circumstances, so do trees and shrubs hold precisely the same rank in the kingdom of vegetable nature. In their structure they are alike superior, in their form more symmetrical, and in their duration far less evanescent. To their nourishment, also, their more volatile allies contribute by their death, since they feed and nourish upon (as it were) the gases generated from their remains.

It need not, and does not, then, surprise us, that their skilful and judicious cultivation has come to be regarded as the noblest occupation of the horticulturist; or that a fine specimen of a rare exotic species should be looked upon with the proudest and most pleasurable emotions. In the human mind there is a natural impressibility with the grand and beautiful; and, as has been truly said—

"Than a tree, a grander child earth bears not."

But the appearance of these monarchs of vegetation is most powerfully affected by locality and difference of treatment; and our present object is to institute a comparison between the method of growing them in what are termed *arboretums*, and that of planting them singly or in groups, without any regard to botanical order or affinity, in conspicuous parts of the pleasure grounds of suburban and country residences. There is undoubtedly merit attached to each of these systems; therefore it is proper we should examine the claims of each, and endeavor to show which is the most ornamental and appropriate.

What is an arboretum?—Considered vaguely it is simply a collection of indigenous and exotic trees, disposed according to the proprietor's taste, and congregated upon a small superficies of ground, or scattered over an estate of twenty or thirty acres. This acceptation of the term is not, however, the general one. In all modern arboretums, every genus or tribe of plants is grouped together more or less densely, and

the whole collection arranged with order and regularity; so that the connecting link of natural affinity may be at once discovered between immediate neighbors. In very large estates, or in botanical or other public gardens, these departments create a variation, and this is frequently a very pleasing one. They also furnish the beholder, at one glance, with a knowledge of the hardy ligneous species of every genus, tribe, or order of plants, and the position they occupy in the natural system of botany.

Arboretums are thus of great advantage to the scientific student, or to any one really desirous of acquiring a thorough knowledge of the aspect, habits, varieties, and affinities of arboreous plants. By this arrangement, too, a more specific and discriminate cultivation can be afforded, with greater certainty and convenience. Nor is there any other mode whereby a *complete* assortment may be conserved, which is desirable in many respects. Yet, when we have said this, there remains nothing more to be said in their favor. For they are entirely incompatible with beauty, with ornament, and with the proper development or exhibition of the character of a plant. Indeed, they are nothing more than living descriptive catalogues, experimental and observative departments — and not at all to be thought of for *limited* pleasure grounds, whether public or private.

Now, if it be desirable to exhibit the charms and beauties of vegetation, we must avoid arranging plants of any description according to affinity, or their position in any system of classification; for in landscape gardening there are two extremes to be deprecated — dull monotony, and a slovenly, displeasing irregularity. This may seem rather paradoxical, but it is nevertheless true. Local uniformity differs widely from a comprehensive unity, and is confined to the particular beds or plots occupied by the species of certain genera or tribes. These frequently assimilate so closely in appearance, that in one place a bed of trees will be seen all evergreen; close by, a cluster of dwarf shrubs, all flowering at the same time; and equally near, in another direction, a group of the largest deciduous trees. In themselves all these are monotonous and present a total lack of congruity, if viewed in connection and comparison with each other.

Nothing then can be more adverse to the genuine principles of landscape disposition, than the system above described. There must be diversity of outline, form, color, season, and the duration of foliage and flowers, as absolute essentials to the beauty of any scenery. Without them it appears dull, formal and constrained; in fact, *unnatural:* and much as theorists may affect to despise imitating Nature, it is after all the correct system, and the only successful one.

But we are to remember that a garden is the medium which associates natural with artificial objects — the mansion with the surrounding country. Its arrangement and appearance should therefore be in precise accordance with this design. To plant trees, then, *en masse*, or even in arboretums, without regard to size, appearance, or their general character, is not only inadmissable, but intolerable, where all is required to be conformable and harmonious.

In planting ornamental trees and shrubs, (and no others should be allowed a place in the pleasure garden,) they should be so arranged as to stand quite distinct from

each other, so that each one may be witnessed and examined separately, without suffering any detraction from its entire exposure. They must also be so blended, associated, and intermingled, that a distant view may present the appearance of an agreeable and diversified mass of verdure. These two objects apparently so remote, may nevertheless be concurrently accomplished. In shrubberies or parterres, whether large or small, a due regard to the known character or habits of the plants selected, will enable the gardener (if sufficiently intelligent) to place them at such distances as will allow room for their full and complete extension, without becoming entangled with other plants. Again: If the plot of ground be small, or the diminutive size of the plants oppose this arrangement at first, they may be so planted as to admit of any *subsequent* thinning to the required extent, without in the least detracting from the general appearance of the group. Judgment and taste will overcome obstacles, and sooner or later there will appear a harmonious development.

The shrubbery thus planted with exotic trees, would in itself be an *arboretum;* and if that charming *variety* be consulted which can alone please the eye, none of the objections against those departments would in such a case apply. Species and genera would certainly be separated and scattered about, and their associations lost; but then, *pleasure gardens* are not botanical nurseries; and we are of an opinion, that few, if any, proprietors would follow out any such idea, at the expense of everything that renders them picturesque and attractive. If information be desired, that can be readily obtained from books; and the attempt to illustrate it, or to facilitate its acquirement by the disposing of plants according to any other system than that dictated by taste, sense, and nature, is neither more nor less than an outrage on all the principles of beauty, and a thorough perversion of the science of landscape gardening.

In planting trees and shrubs, no method is so well calculated to display the perfection of their character, as that of singly placing them in conspicuous situations in the center of small parterres, or on lawns. It is, however, rather unfortunate, that this system must be *limited* to certain portions of the pleasure ground; for if carried to too great an extent, its effect would not be pleasing. For this purpose, then, we are to select the most rare, beautiful, and symmetrical kinds. We have thus the advantage of examining the plants on every side. Being perfectly isolated, air and light are freely admitted to all their surface, and from the operation of these agents, they alone can attain that graceful symmetry of form which all plants should exhibit in such situations.

We have thus given *our* opinion of the different modes of planting and arranging ornamental hardy shrubs and trees. The subject admits of a much greater scope of language and development of detail than is here presented to the reader, yet enough is said to give a right direction to the thoughts of the inexperienced, and to lead them, as we think, properly, in the laying out of their pleasure grounds. In very extensive domains, there is no doubt that arboretums may in some degree be rendered ornamental, but the extension of the system is by no means to be desired, for it is not only defective in principle, but in practice these defects are glaringly manifest.

Let every man, then, who loves his garden and his pleasure grounds, and who seeks to embellish and adorn them—who would heighten rather than mar their natural beauties, and steer with precision between the rules of art and nature, avoiding the defects of either, yet rising superior to both, let him so plant his trees and shrubs as to present individually and collectively the greatest diversity, combined with the most delightful and harmonious arrangement.

ASIATIC CONIFERS.*

BY JOHN SAUL, WASHINGTON, D. C.

California gives us very beautiful evergreens, and among its conifers some of the loftiest trees in the world; but the Himalayan mountains give a still more decided character to many of the trees and shrubs which it produces. These lofty mountains, whose sides are clothed with the richest vegetation, appear to impart a portion of their own gigantic stature to the trees and shrubs which they produce;—the Rhododendrons attain the height of trees; the Holly (*Ilex latifolia*) also grows high, having foliage as large as *Magnolia grandiflora;* the Spruce (*Abies morinda*) has longer and more graceful foliage or branches than its conjeners in Europe or this country. How long, broad, and beautiful, is the foliage of the Silver Firs (*Picea Webbiana* and *pindrow*) compared to Balm of Gilead, or even the beautiful Silver Fir of Europe, and what a much greater height they attain. I might also point to the Cedars, and other trees, but these few are sufficient to show the marked character of Himalayan vegetation. The following list is not intended to include all, but I think among them will be found all or nearly all the principal species most worthy of general cultivation:

Juniperus recurva—*The Weeping Nepal Juniper.*—This very beautiful weeping evergreen shrub has a character decided and peculiar to itself, and among a collection of evergreens it never fails to catch the eye of the most careless observer; and how can it be otherwise, if we picture to ourselves a shrub eight or ten feet high, (a very common height now in England,) thickly set with branches all round, and every one, from its summit to its base, pointing to the ground. the lower branches resting on the ground. It is a more decided weeper than the Weeping Willow, our old favorite; and when its evergreen character is added to this, how much is its beauty enhanced. In summer it assumes a beautiful vivid green, bearing a profusion of berries about the size of peas, which ripen in the fall, and which add much to the beauty and interest of the plant. Native country, Alps of Nepal and Cashmere.

Juniperus squamata.—A low, trailing bush, of distinct habits, retaining its beautiful green appearance through the winter and spring months. Our native trailing Juniper assumes in winter that unpleasant appearance I have already noticed. It is perfectly hardy in the Middle States, which need not surprize us when we consider that it comes from the Alps of Bootan and Nepal, at the elevation of 11,500 feet.

Juniperus Chinensis—*The Chinese Juniper*—is a very beautiful shrub. In color

* Continued from April number.

it resembles the Swedish, having however the green a little more vivid. It is not of so upright a growth as the Swedish, but more inclined to branch out, forming a magnificent bush, and retains its color well through winter. Native of China and Japan.

JUNIPERUS SPHŒRICA.—A recent importation from the north of China, where it was discovered by Mr. FORTUNE, and sent to Messrs. STANDISH & NOBLE. According to Mr. FORTUNE it forms a tree 30 to 50 feet in height. Dr. LINDLEY says:* "The species differs from *J. Chinensis* apparently, in not having any acicular leaves, and very decidedly in the size and form of its fruit, which is twice as large as in that species, and not at all depressed at the end, but very regularly spherical." There is little doubt but this tree is hardy.

JUNIPERUS EXCELSA.—Were I to select two of the most distinct and beautiful of all the Junipers now in cultivation, I would take the first named—*recurva*—and the present subject. This is quite as distinct and as beautiful as that, though they are the very antipodes of each other—that is gracefully weeping, this is remarkably erect in its growth—that is of a deep green, this is very glaucous; and in nearly every point they are dissimilar. This forms a beautiful erect tree with a silvery, feathery, graceful appearance; the contrast with other conifers is remarkable and fine. Native of the Western Himalayas.

BIOTA ORIENTALIS; *syn.* THUYA ORIENTALIS—*The Chinese Arbor Vitæ.*—This beautiful evergreen is well known in both hemispheres, and where it succeeds well few trees are more beautifully symmetrical. In color it is a beautiful green, and in this quality much superior to our native Arbor Vitæ. This color, in general, it retains until the beginning of winter, from which time up to the commencement of growth it assumes the unpleasant rusty brown appearance. In Britain it forms a much more beautiful and compact tree than in this country, and is very extensively planted, though in the neighborhood whence I write are some very fair specimens, much better than further north where it does not appear to be quite at home. Climate has, no doubt, much, if not all, to do with this. Our native Arbor Vitæ (*Thuya occidentalis*) forms a very ragged poor tree in England, while on some parts of the European continent it proves as beautiful as on the Highlands of the Hudson. To what can we attribute this but to climate? and if climate affects the one species, it is likely to affect the other. The severe winters of the Northern States do not appear to agree with it; still, from its beauty, it deserves to be extensively planted. It forms a large tree in its native countries, China and Japan.

BIOTA TARTARICA; *syn.* THUYA TARTARICA—*Tartarian*, and sometimes called in the nurseries the *Siberian Arbor Vitæ.*—About four years since I visited a gentleman in the west of England who had a very beautiful collection of conifers, comprising most of the rare and valuable Cedars, Pines, Cypresses, &c., many of which had attained a fair size, and some truly lovely. After minutely surveying and scrutinizing all, we came to the gem of the collection. What was it? Had I ever seen it before? How lovely! How beautiful! Is it possible it is the Tartarian or Siberian Arbor Vitæ of the nurseries? Yet such it was. Though I had grown thousands of this in the

* Paxton's Flower Garden.—Vol. I, p. 58.

nurseries, I had never seen so large or beautiful a specimen before. It was a tree some thirty feet in height, feathered to the ground; at its base it is broader than the other Arbor Vitæs. This, I should suppose, would have a diameter of from fifteen to twenty feet, gradually tapering to the point—very symmetrical, yet not showing a stiff outline like the Chinese, but filling beautifully up with its graceful feathery branches. In color it is not as good as the Chinese, yet better than our native plant. This I consider the most beautiful of all the Arbor Vitæs, and very hardy, and whoever plants evergreens should not overlook this. Native countries, north of Asia and Nepal.

BIOTA STRICTA; *syn.* THUYA STRICTA.—There appears to be some confusion regarding this plant. The true species appears to be something in the way of the preceding, but, as the name implies, more strict in its growth. An erect growing variety of the Chinese is sometimes sold for this plant. A tall tree from north of Asia.

BIOTA PENDULA; *syn.* THUYA PENDULA—*Weeping Arbor Vitæ.*—This very singular and distinct plant is so very dissimilar to the other species of the genus, that we need not be surprised when we hear people assert—and some do—that this is a cross between a Juniper and Arbor Vitæ; yet a close inspection by any one acquainted with the genus will soon convince him it is a true species. It is a straggling weeping bush, having long flexible shoots, in the way of some of the Australian Casaurinas. This plant grows freely when grafted on any of the other Arbor Vitas. Standard high it forms a singular weeping plant, though I cannot say a strikingly beautiful one. Native of Northern Asia.

CUPRESSUS TORULOSA—*Himalayan Cypress.*—Thousands of seedlings of this tree have been raised in the principal English nurseries of late years. It is a very rapid growing tree, and evidently a very beautiful one. There are several varieties, some of which rather tender, and will not stand many degrees of frost, while others are pretty hardy; the variety *elegantissima* is as hardy as any that I know. As this plant grows rapidly and late in the fall in England, its shoots being young and sappy are frequently cut back by frost. In this country where the wood would be well ripened it will stand several degrees more cold. Should, however, the winters of the Middle States be too severe, it will grow admirably in the States a little more south, and from its extreme beauty it should be liberally planted. Writing of this tree Dr. LINDLEY says:* "It would seem that there is but one species of Cypress inhabiting the north of India, and that the *Cupressus torulosa*—why so called we cannot discover. For the native country of this plant Bhotan was first given by the late Prof. DON, upon the authority of Mr. WEBB. Afterwards, Dr. ROYLE stated that it appeared to be the plant called *Theelo* by the natives, seen between Simla and Phagoo, and near Jangkee Ke Ghat, a high hill to the southward of Rol. It is also found in Kemaen, near Neetee, Simla, and in Kunawur." ENDLICHER says that it occurs in Butan and Nepal as high as 8500 feet of elevation. Dr. WALLICH adds the southern mountains of Oude. Is it really true that there is but one Indian Cypress, and that the *torulosa?* And is the *torulosa* what is spoken of by all these writers? We doubt it much. In the first place, *Cupr. horizontalis* occurs in Persia; why not in India? In the next

*Paxton's Flower Garden.—Vol. I, p. 167.

place, there are such differences among the specimens of Indian Cypresses raised in England, and between them and the wild specimens, as to suggest reasonable doubts concerning their identity. As far as we can investigate the matter, Indian evidence seems to fail us, and home evidence is conclusive. All that can be affirmed with confidence is, that in this country, raised from Himalayan seeds, exists a glaucous, upright, graceful Cypress, which is distinct from all European kinds, and to which the name of *torulosa* is applied. It has a perfectly straight stem, and when young, a compact, conical growth, by which it is known at first sight. It attains a large size, and is a fine tree. Native of Bootan and Nepal.

CUPRESSUS GLAUCA; *syn.* LUSITANICA—*The Cedar of Goa.*—This extremely graceful and beautiful plant will succeed in the open borders only in the very mildest parts of Britain. In that country it is frequently cultivated in green-houses and conservatories for the grace and beauty it throws in among a collection of plants. In this way only can it be cultivated in the Middle and Northern States; but as a plant for the Southern States few have greater claims upon the planter, from its elegance, grace and beauty. It is a fine tree, of large size, near Goa, in Hindostan.

CUPRESSUS FUNEBRIS.—On the introduction of this tree from China by Mr. FORTUNE, it was spoken of by some of the first writers of the day as one of the most beautiful evergreen trees ever introduced. Has it proved to be so? So far I think it has, as few evergreen trees have promised better. It is free and thrifty in its growth, even in its young state is very beautiful, and judging from the little experience had of it, it will prove hardy in the Middle States. Its discoverer, Mr. FORTUNE, thus writes of it: "The most beautiful tree found in this district is a species of Weeping Cypress, which I had never met with in any other part of China, and which was quite new to me. It was during one of my daily rambles that I saw the first specimen. About half a mile distant from where I was, I observed a noble looking fir-tree, about sixty feet in height, having a stem as straight as the Norfolk Island Pine, and weeping branches like the Willow of St. Helena. Its branches grew at first at right angles to the main stem, then described a graceful curve upward, and bent again at their points. From these main branches others long and slender hung down perpendicularly, and gave the whole tree a weeping and graceful form. It reminded me of some of those large and gorgeous chandeliers, sometimes seen in theatres and public halls in Europe." Dr. LINDLEY says of it:* "This is probably the most interesting coniferous plant yet in cultivation, and must in time displace the Weeping Willow. It is perfectly hardy, as was indicated by its native country. A figure is given in Lord MACARTNEY'S Embassy to China, where it forms a weeping tree in the foreground of the view of the 'Vale of Tombs,' a place situated in the inclement climate of Zhe-hol. The rude representation of it on Chinese porcelain, having been copied by our manufacturers, have given rise to the 'willow pattern' found in one of the commonest kinds of English table ware." Native of the Northern Provinces of China.

CUPRESSUS SEMPERVIRENS.—This the well known Cypress of Southern Europe and the Levant, used principally in those countries for planting cemeteries and grave yards.

*Paxton's Flower Garden.—Vol. I, p. 47.

The Turks in a special manner plant almost exclusively their cemeteries with this tree, and perhaps for this purpose it has no superior in the world in mild climates. It is very erect and spiral in its growth, and it looks as if nature intended it to grow at the last resting place of man. Unfortunately with us this tree is too delicate for the Middle States, and we can never hope to see it grow north of South Carolina.

(To be continued.)

STRAWBERRIES.*

BY WM. R. PRINCE, FLUSHING, N. Y.

30. *Abyssinian Prince.*—One of Dr. Brinckle's seedlings, of medium size, conical form, and dark crimson color, productive. P.

31. *Methven Scarlet, or Victoria.*—Very large, roundish depressed, dark scarlet, showy, coarse, very productive, profitable for market. P.

32. *Hudson.*—This ancient and very distinct variety is identical with the "*Hudson of Cincinnati.*" The fruit is of large size, pointed conical form, dark scarlet or crimson when fully ripe, and is then of excellent flavor. The berries redden some days before maturity, and are in consequence often plucked prematurely, and the fruit from this circumstance has been deemed inferior in sweetness and quality. The berries have the peculiarity of remaining green at the extreme point until they attain perfect maturity, when that becomes red also. This is one of the few varieties of which we possess plants of both sexes, and they have been grown jointly at these nurseries for more than forty years. It appears that at Philadelphia they possessed only the *pistillate* variety, and that it alone was transmitted to Cincinnati many years since, which serves to account for all the Ohio plants being of that sex. It is highly productive, and perhaps none other will yield a larger crop, but it is indispensable that its own male, or some other, should be connected as fertilizer. It is entirely distinct from the "*Hudson's Bay*," of the London Horticultural Society, which is one of the *Scarlets*, whereas this is of the *Pine* family. In my investigations I have found it to be identical with a variety called "*Mulberry*," and it may be identical with the variety so named in the Catalogue of the London Horticultural Society. About thirty-five years ago it was generally called "*Red Chili*," and I think it was imported from England by my father, the late WM. PRINCE, under that name, but he finding it distinct from the *Chili* family, changed that name to the present one. H and P.

33. *Burr's New Pine.*—Medium size, light scarlet, handsome, high, spicy flavor, not a full bearer, and the plant less vigorous than many other varieties. P.

34. *Burr's Scarlet Melting.*—Rather large, rounded or short cone, scarlet, showy, moderate flavor, rather soft for market, ripens early, very productive, the most valuable of BURR's varieties. P.

* Continued from the April number.

35. *Rival Hudson* (*Burr's.*)—Rather large, conical, dark scarlet, showy, medium quality, acid, good for preserves, very productive. P.

36. *Columbus* (*Burr's.*)—Large, dark scarlet, inferior flavor, very productive. P

The four preceeding varieties were originated by Mr. JOHN BURR, of Columbus, Ohio.

*37. *Serena.*—Rather large, light scarlet, fine flavor, productive.

38. *Iowa.*—Large, broad rounded, light orange scarlet, peculiar color, beautiful, early, productive, inferior flavor, but merits culture for its other qualities. It is one of a distinct family or species, natives of our western prairies.

39. *Jenney's Seedling.*—Large, rounded or obovate, crimson, too acid until fully ripe, then of good flavor, very productive. It has been much overrated, when there are so many others preferable to it. P.

40. *Lizzie Randolph.*—A seedling originated by Dr. BRINCKLE, of Philadelphia: the fruit round, averaging larger than *Hovey's Seedling*, but inferior to that in flavor, very productive, a showy fruit of little value. P.

41. *Genesee.*—Rather large, with a neck, bright crimson, showy, moderate flavor, fruit on long stems, productive, growth vigorous.

42. *Monroe Scarlet.*—Large, roundish, light scarlet, good flavor, very productive, estimable. P.

43. *Climax Scarlet.*—Medium size, conical, light scarlet, good flavor, rather acid. P.

44. *Orange Prolific.*—Large, rounded, orange, scarlet, rather acid, very productive, late. P.

45. *Scarlet Cone.*—Rather large, conical, bright scarlet, productive. This and the four preceeding varieties were originated by Messrs. ELWANGER & BARRY, of Rochester.

46. *McAvoy's Superior.*—Of vigorous growth, fruit very large, rounded, dark crimson, juicy, very good flavor, fine color, very productive. P.

47. *McAvoy's Pistillate, No.* 1.—A seedling from the *Iowa*, and bears much affinity to its parent in color and size: large, bright scarlet, very handsome, productive, but not high flavored. P.

48. *McAvoy's Extra Red.*—Large, beautiful, productive, moderate flavor and medium quality. P.

49. *Schneicke's Hermaphrodite*, or *Longworth's Prolific.*—Fair size, rounded, scarlet, sweet, very fine flavor, productive, of vigorous growth.

50. *Schneicke's Pistillate.*—Large, rounded, crimson, very juicy and good, but not equal to *McAvoy's Superior.* P.

51. *Moyamensing Pine.*—Secondary size, conical, crimson, juicy, not sweet, and but little flavor, strong fruit stems, ripens gradually, very productive. It is of vigorous growth, and assimulates greatly to the old *Hudson*, of which it is doubtless a seedling. P.

52. *Walker's Seedling.*—Fair size, dark red, fine flavor, productive.

53. *Californian Pine.*—Moderate size, scarlet, same form and flavor as the old *Hudson*, productive. P.

54. *Mexican Alpine.*—Found by the writer on one of the loftiest volcanic mount-

ains of Mexico: foliage resembles the Alpine varieties of Europe, and very distinct from all other. American species, fruit scarlet, and of moderate size.

*55. *Amanda.*—Short conical, light scarlet, juicy, good flavor, productive. P.

*56. *Heroine.*—Good size, light scarlet, conical, fine flavor, productive. P.

*57. *Psyche.*—Large, conical, scarlet, beautiful, excellent flavor, very productive. P.

*58. *Troubadour.*—Large, elongated cone, crimson, good flavor, productive. P.

*59. *Victorine.*—Large, scarlet, fine flavor, very productive, late flowering, estimable. P.

*60. *Imperial Scarlet.*—Large, light scarlet, excellent flavor, and will probably prove one of the most estimable. It fruited for the second time the past summer. P.

*61. *Prince's Climax.*—A very hardy and robust variety, surpassing almost every other in the vigor of its growth and its large foliage. The fruit is borne on strong stems, and exceeds all others in average size without any small berries. It is of the most beautiful light scarlet color, and the best suited of all the varieties for a splendid market fruit. The flavor is very pleasant, but not equal to *Le Baron* and other highest flavored varieties. It is pistillate, and exceedingly productive, and presents the most admirable display of fruit we have ever beheld. P.

62. *Large Early Scarlet, or Early Virginia,* is so well known that it may seem unnecessary to describe it. The fruit is of secondary size, light scarlet, and of pleasant flavor, and it produces one-third to one-half of a full crop. It has served very generally as a fertilizer, resulting often from circumstance than from choice. Its blossoms expand too early for impregnation of the numerous later varieties, and on this account "*Le Baron*" is much preferable as well as for its larger and finer fruit and the abundance of its crops, and for an early flowering fertilizer the "*Triumph*" is much to be preferred.

63. *Bicton Pine.*—Large, white tinged with pink, good flavor, moderate bearer, only valuable for its color.

64. *British Queen.*—A very large and splendid fruit, and of fine flavor, but utterly worthless for its unproductiveness in our climate, unless great pains are taken in its culture. A bushel may be grown from other varieties more easily than a quarter from this. A pistillate variety from this one would be very valuable, as its sexuality would remedy the barrenness of the parent.

65. *Princess Royal.*—Large, dark scarlet, conical, good flavor, ripens late, poor bearer.

66. *Elton Pine.*—A large and splendid fruit, fine flavor, ripens late, a poor bearer; but this and the preceding will produce some admirable fruit, if especial pains are given to strengthen the soil and to detach all the runners.

67 to 71. *Myatt's Black Rock, Eleanor, Globe, Mammoth* and *Prolific,* are English Hermaphrodite varieties, mostly of good flavor, but poor bearers in our climate, and their foliage is very subject to be burnt by our powerful sun. The *Mammoth,* though large, is of miserable flavor.

72. *Goliath* (*Kitley's.*)—It has been much lauded, but is now denounced in English publications as "a shy bearer and insipid in flavor."

73. *Hautbois.*—This ancient European species is remarkable for the musk flavor of its fruit, and for the barrenness of its seminal varieties. The *Prolific* and *Large Flat Hautbois* produce tolerable crops. The *Green Hautbois* is more an object of curiosity.

The light English hermaphrodite varieties from No. 63 to 71, commencing with the *Bicton Pine*, I do not think worthy of culture, except by such fancy amateurs as are willing to waste much time and culture for small returns. Very many persons have never seen a *full crop* of strawberries as produced by pistillate plants, and therefore think much of a partial one. They should cultivate some of the pistillates noted as "very productive," and then decide understandingly. I have passed over the *English Wood* and *Alpine* Strawberries, as they are so well known to every cultivator.

The following varieties are of little comparative value on account of their unproductiveness, or of the inferior quality of their fruit, and have consequently been superseded, as well as forty other varieties as published in our catalogues:

Aberdeen Beehive,	Downton,	Old Pine,
Alice Maud, (Princess,)	Duke of Kent,	Prince Albert,
Black Prince,*	Dundee, (synonym,)	Prince of Orleans,
Buist's Prize,	Fay's Seedling,	Richardson's Early,
Burr's Seedling,	French Cucumber,	Richardson's Late,
Burr's Late Prolific,	Keen's Seedling,	Richardson's Cambridge,
Burr's Mammoth,	Knevett's Pine,	Roseberry,
Burr's Profusion,	Lord Spencer,	Royal Pine,
Burr's Scioto,	Myatt's Eliza,	Royal Scarlet,
Cremont Perpetual,	Myatt's Deptford Pine,	Swainstone,
Cushing,	Necked, Pine, (Ohio,)	Willey, or Willey's Seedling.

A SMALL SELECT ASSORTMENT.—When considering the characters of so great a number of varieties, each of which is valuable for some property or other, and all of which constitute *a selection* from the mass that have for years been passing in review, it is difficult to designate so small a number as six varieties that shall combine all we desire. However, I will venture so far as to select six for market, and six for a family garden, such as I would prefer, if confined absolutely to that small number:

Six varieties for market—1. *Le Baron*—productiveness, and excellent flavor. 2. *McAvoy's Superior*—productiveness, beauty and flavor. 3. *Cornucopia*—productiveness, beauty and flavor. 4. *Triumph*—Earliness, beauty and productiveness. 5. *Hovey's Seedling*—great size and productiveness. 6. *Primate*—productiveness, beauty and firmness.

Six varieties for a family garden.—No. 1, 2 and 3 of the preceding list. 4. *Superlative*—productiveness, flavor and color. 5. *Coronation*—size, beauty and flavor. 6. *Sylphide*—size, beauty and flavor.

I have purposely omitted *Prince's Climax* and the *Imperial Scarlet*, as they are not procurable, not having yet been offered for sale.

*The *Black Prince*, although it has been extolled, is nevertheless a shy bearer, often insipid in flavor, makes but few runners, and is subject to die out.

THE BLACK KNOT ON THE PLUM.*

BY WM. MERVINE, UTICA.

Many causes have been assigned for the disease in question, none of which, so far as my information extends, are satisfactory. Some have supposed it to be occasioned by diseased sap, or vegetable ulcer; some, that it is the work of the curculio; others, with more plausibility, assert that it is the result of poison infused by the minute sting of an insect. But none of those entertaining the latter opinion have described the kind of insect, or its characteristics; and it is therefore fair to assume that their belief rests upon conjecture alone. The latter opinion, however, with the exception of the minuteness of the sting, is correct. It will be permitted me to say, that I believe myself to be first in determining the fact, and in ascertaining, certainly, the habits and character of the insect. I will, therefore, proceed as briefly as may be, and without regard to possible charges of egotism, for asserting in opposition to many scientific men on the subject, what I know beyond a doubt to be the origin of the excrescence, or tumor, and to describe the insect which causes it, its habits, and the best method of guarding against its attacks and increase.

The insect here referred to belongs, I believe, to the Hymonoptera class, and is about an inch in length; color, pale yellow; has four wings, and hind legs resembling those of the grasshopper, which seem designed for similar use; and, although furnished with wings, it uses them only, so far as I have discovered, for calling its mates. This it effects by shrill notes through the medium of vibrations, created by a rapid motion of them, and which affords the means of tracing it. The abdomen of the female is much larger than that of the male, in the extremity of which is concealed a sting of about a quarter of an inch in length, with which it pierces any shrub or limb selected as a receptacle for its eggs — often numbering a dozen or more, which are deposited with some acid poison in seperate cells, longitudinally. From these eggs the larvæ are hatched — change to the pupæ, or chrysalis state, and emerge during the ensuing June.

The excrescence does not appear until after the escape of the insects, the swelling of which is caused by the circulation of the sap being arrested in its natural course by the poison infused, which flows round the punctured parts, extravasates, and gradually forms the tumor. On dissecting one of these tumors, a grub may be sometimes found, but it does not cause the excrescence. Any one may satisfy himself of the truth of the foregoing remarks by observing the appearance of the insect during the months of August and September, especially the latter, that being the season of coition, when it may be found making its deposits; these, on being completed, are varnished over with a water-proof substance, presenting a dark, glazed appearance, by which it may be known, and on carefully splitting a stung limb in the direction of the perforations early in June, the insect may be found in the larvæ state.

I have carried on for two years past a war against this insect, and never suffer one

* This paper was read before the the Utica Scientific Association the past winter.

to escape when it can be traced; which, together with a judicious application of the knife in cutting off, and out, all the affected parts so soon as they appear and burning them, I manage to preserve and keep my trees clear of the unsightly tumors. If all those who are interested in the growth and preservation of those trees would adopt the course pursued by me, this destructive insect might, in time, be exterminated, or its effects, at least, very much lessened. Indeed, unless something be done to arrest its progress, many years, in my opinion, will not elapsed ere the cultivation of the Plum and Cherry will have to be abandoned.

CULTIVATION OF GRASSES.

BY L. DURAND, DERBY, CONN.

One of the most important of all farming operations is the cultivation of the several kinds of grasses for hay and pasture; for when the farm can be made to grow any or all the improved kinds of grasses well, any other crop, grains or vegetables, will grow well. We intend to say something of a few of the most important of the cultivated grasses.

Red Top.—Of all the many valuable kinds of grasses, we think none is better than Red Top either for cattle or horses. This is very heavy, and we think that there is less shrinkage in a ton of this hay, after it goes into the barn, than in any other kind. As an improver of soils, we are satisfied that, in the long run, there is no grasses, in all respects, equal to Red Top. This grass has a faculty or nature of spreading its roots over the entire surface of the soil, starting out all weeds and foul grasses, and making a close and firm sward. This is one reason why it is a better improver of soils than most grasses, because it affords a perfect protection to the soil against the hot sun, washing rains, &c. It delights to grow in rather moist bottom lands inclining to clay, yet it will grow well on high, dry, loamy soils, if the soil has been plowed to a good depth. We are speaking now more particularly of grass lands intended for mowing. This grass is also a good one for pasture lands, as it will continue to grow through the season where fed off by cattle. With Timothy grass this is not so much the case, as it is not inclined to grow much as after-math, unless in quite moist ground. Yet there are many farmers now who never sow this grass upon their land and of course they never have any, only what happens to come up naturally. After this grass once gets firmly rooted in the soil it will remain without much difficulty. Turn over a sward of this grass for winter grain, wheat or rye, and the next season after the grain comes up the ground will be almost entirely swarded over with Red Top, although no grass seed has been sown. But the better and more safe way is to sow the grass seed at every breaking up of the ground.

Timothy.—This grass is also one of the best of our cultivated grasses, and it is, perhaps, in most cases, more largely grown by farmers than any other one kind. For horse hay it is thought to be far preferable to any other, and it does make a good

rack hay for horses if well cured. Still, for neat cattle alone, we do not think that it makes as good hay as Red Top. Yet, where Timothy and Red Top are grown together, we think it far preferable for horses, or market hay, than where Timothy is grown alone; and if a little fine Clover is mixed with Timothy and Red Top, we think it will still be improved as market hay. But then Timothy grows but once a year when it is mowed, there being very little rowen or after-math, unless in low, moist ground. Here this grass is very apt to grow up in separate tufts or bunches, and not sward the ground over close, as is the case with Red Top. All farmers know that in the best cultivated meadows this grass is very apt to grow up in this way year after year without sowing the ground over in a close sward, unless it is in a low swale of moist ground. Here, on clean Timothy lands, after the third or fourth mowing, the crop will begin to fall short, so that in order to keep up the yield of hay the ground must be broken up and re-seeded. But if the grass is of Timothy and Red Top grown together, as it should be, then the meadows will hold out much longer in growing a good crop, as the Red Top forms a sward, and then breaking up need not be resorted to as often. When Timothy and Red Top are grown together, generally a finer and better crop of hay is made than Timothy alone, which, in strong ground, will grow up coarse and large.

Clover.—Clover grass is one of the best grasses for enriching a soil that is cultivated in our country. It also makes good hay, if well cured; yet there is always a good deal of uncertainty about making it into good hay. As a crop for hay we consider it the least valuable in this respect; but as a crop for plowing under, or feeding off by cattle, no crop of grass can begin to enrich the soil like Clover. Much has been said and written in regard to plowing under a crop of Clover as a green dressing, or feeding it off by cattle. Both ways are good, and both have their advantages. If a soil is to be renovated in the shortest possible time, we think it can be done best by plowing under one or two green crops of Clover when in full bloom. If a longer course is wanted, the best way is to feed off the crop by cattle through the season. This grass, unlike many other kinds, will continue to grow up through the whole season as many times as it is fed off. The better way is, where a large crop of Clover has covered the land thick, and when it is in full bloom, turn in as much stock as will feed it down in the shortest time. Managed in this way, very little old grass will be left to dry up, but all will be fed down together; and then a new crop will be constantly growing through the whole season. The roots of Clover grass extend a great way into the soil, and they are very enriching—much more so than any other grass we know of—so that it has become a proverb among improving farmers, that when they can get Clover to grow well on their farms, they can grow anything else. The roots of Clover strike deep into the soil, so that when it gets well rooted it will stand a great drouth.

For "lawns, or private grounds," connected with country residences, we think a mixture of Red Top, White Clover, and Blue Grass, sown together, would make a good covering for grounds of this character. What such grounds want is a covering of grass in the shortest possible time, and one that will form a close, tight sward.

However, much of this will depend on the after cultivation. Lawns require to be sheared, or fed down by sheep, a number of times in the course of the season, in order to get a close, tight, firm sward.

APPLICATION OF WIND AS A POWER FOR RAISING WATER.

BY J. P. KIRTLAND. CLEVELAND, OHIO.

A GARDEN engine, manufactured by DOWNS & Co., Seneca Falls, State of New York, enabled me to preserve many valuable plants, shrubs, and trees, during the severe drouth of last season. It was equally important as an implement of warfare in a contest I waged with the cherry and pear slugs, and some other depredating insects. The force with which it throws tobacco water, and other medicated washes, is sure to reach those enemies, however securely they are concealed. Its principles are simple, and the workmanship excellent. No gardener can well dispense with its use.

To pump from a well the requisite supplies of water was a work of no small labor. It led to the investigation of a method of working a pump by means of the wind. The practicability of the plan I am about to suggest, does not remain to be tested by experiment. During former years, a small wind-mill was in successful operation upon the farm of Mr. ANDERSON, five miles west of Ashland, Ohio, on the road leading to Mansfield. It worked a pump that amply furnished a large stock of cattle, which otherwise could obtain no water. Two days only had it ceased to perform its duties during more than two years, and that interruption was occasioned by the meddling of mischievous boys. It is still in operation for ought I know. The cost of this simple machine, including pump, did not exceed fifteen dollars.

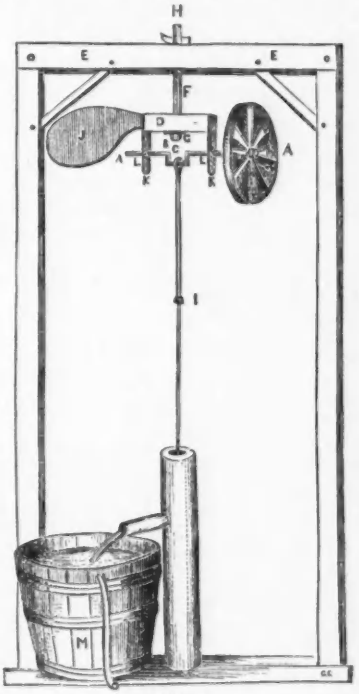


PLATE I.

By reference to Plate I, the principles on which it was constructed will be at once comprehended. The direct application of the power, without the intervention of any geering or machinery, obviates much friction, hence a small amount only of power is required. The diameter of the wheel should not exceed four feet, a few inches less is

preferable. It is firmly fixed by its hub on an iron axle formed of a square inch bar. The sails or buckets are secured, at their outward ends, to a wooden rim, like that of a large spinning wheel. An inch and a half crank is raised on the axle at B, which, at that point, is cylindrical, and upon which is adjusted the upper end of the piston-rod of the pump C. This, when in motion, of course commands a play of three inches.

The body of the Mill.—A piece of pine plank, D, is suspended from the cross-girth of a frame, E, by an iron bolt, F, furnished at its lowered end with a large head, G, and a washer, and secured by a key, H, at the upper end, admitting of an easy circular motion of the body around the bolt. This motion is coincident with that of a swivel on the piston-rod, I. The rudder, or vane, will necessarily throw the wheel, at all times, into the wind. The axle, A, is suspended from the body by two straps of iron, through which it passes at L, L, where it is cylindrical, allowing free motion. The sketch on Plate I, was drawn from recollection without regard to perspective and proportion, but will perhaps illustrate the subject sufficiently.

A breeze which merely agitates the leaves of the trees will set the machinery in operation. A reservoir of some six or eight hogsheads was kept nearly filled, and when, in windy weather, a surplus of water was raised, it was returned to the well by a waste pipe, M. In the hands of an ingenious mechanic it might, no doubt, be greatly improved. Iron, in some of its parts, might be substituted for wood.

A well, suitably located, will furnish water enough for an ordinary garden, and without labor, by aid of this mill. How much it would improve our flowers, fruits and esculent vegetables, cannot be estimated, but would surely effect a revolution in our present modes of gardening here in the West, where we suffer much every season from drouth. Public tanks, inns, tanneries, and thousands of prairie farms, require its aid. Downs & Co., or some other active firm, would render the community essential service if they would manufacture a supply of these mills and adapt them to some of their improved pumps.

In all this, gentle reader, there is no Quixotism. Its feasibility has been amply tested. We may, however, trespass on the peculiar province of the Don, and, like him, get our heads bruised when we give play to our imaginations on this subject. We will venture on the movement.

Attempts are everywhere making to ornament and improve country and suburban residences. Few localities are naturally furnished with the means of supplying a *jet d' eau*, yet it is one of the most important ornamental additions art can supply to such places. One of moderate size can be constructed at any point where a well with permanent and abundant springs can be obtained within twenty-eight feet of the surface of the ground. Practically, beyond that depth, this mill will not raise water with much success. It is obvious that the same wind operating on one mill, and raising a given quantity of water twenty-eight feet, would, by acting on a second mill, raise the same water an additional twenty-eight feet.

Suppose an architect should sketch a barn, or other out-building, with two spires or towers of suitable height and dimensions, giving them an air of taste and beauty. The outline I have attempted to supply in Plate II, but not the finish.

PLATE II.

A, represents a well, either under or contiguous to one of the spires. B, first wind-mill, working pump, C, placed on the center of a wooden cistern, D, of thirty or forty hogsheads capacity, whose bottom is perforated with pump stem, E, E, extending down into the water in the well. F, second wind-mill, working pump, G, and filling reservoir, H, of similar capacity, from reservoir, D, through a tube I, I. J, J, conducting tube. O, the hydropathic mermaid, cascading dolphin, or any other monster fancy may create. L, stop-cock to let the water on the jet. N, stop-cock to let the water directly into the basin, and not through the jet. The waste water is finally discharged into the well, A, by tube, M. The pressure on the tube, J, J, might be too heavy while the water was not discharging at the basin; stop-cock P would relieve it. The waste water from cistern, H, when full, may be discharged through tube R, into conducting tube, J, J.

By these arrangements, sixty or eighty hogsheads of water would always be at command, and at an elevation at which it might be conducted over the dwelling house, lawn, garden, trees, &c. During calm weather it would keep a jet of moderate dimensions in play for several hours, and in windy weather the supply would be constant. On the shores of Lake Erie no day passes without furnishing wind enough to keep the reservoirs replenished. In case of fire they would be equal to an ordinary fire engine.

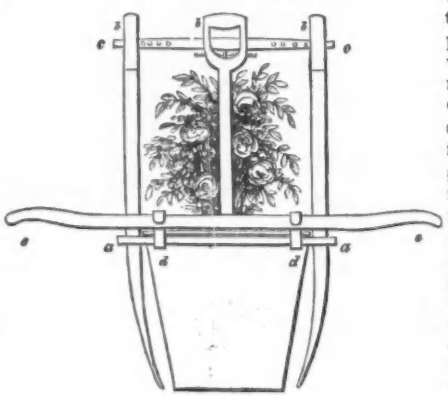
Is this Quixotism?

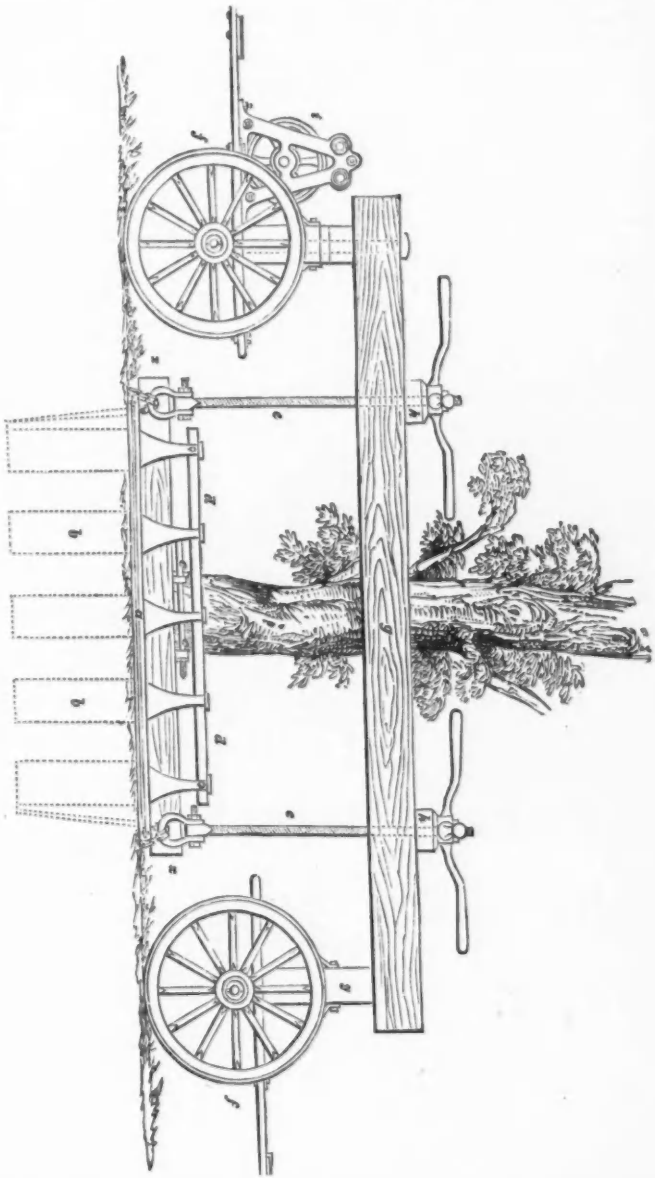
Foreign Notices.

M'Glashan's Transplanting Apparatus.—For several months past the English and Scotch journals have been giving accounts of an apparatus invented by a Mr. M'Glashan, of Edinburgh, for transplanting trees without disturbing the roots. Several successive trials in Scotland attracted very general attention, and a trial at Chiswick—the head quarters of all horticultural experiments in England—was determined upon. We have avoided giving any account of previous trials, looking to this one before the London Horticultural Society as likely to be reliable and decisive, as well as impartial. Such an invention as this cannot but be regarded with a good deal of interest in America, for we are certainly the most impatient planters in the world. We extract the following report of the Chiswick trial, and the cuts illustrative of the machine, from the *Gardeners' Chronicle:*

On Saturday last, in the Garden of the Horticultural Society, Mr. M'Glashen exhibited his apparatus for transplanting trees, in the presence of H. R. H. Prince Albert, attended by Captain the Hon. Dudley de Ros; of Sir Philip de Malpas Grey Egerton, Bart., Sir James Matheson, Bart., and Lady Matheson, Sir Joseph Paxton, Colonel Challoner, J. M. Strachan, Esq.; C. H. Turner, Esq.; C. Devon, Esq.; W. Broadhurst, Esq.; C. Townley, Esq.; C. W. Dilke, Esq.; and many other spectators, among whom were Mr. Ingram, from the Royal Gardens at Frogmore; Mr. Toward, from Osborne; Mr. Barron, Mr. Glendinning, Mr. Osborne, and many such practical men.

The object of the inventor of the apparatus was to lift plants from three to sixty feet high, without disturbing their roots or throwing them out of the perpendicular, and to carry them when lifted to any other place, still retaining their earth and their original position. The principle of the contrivance will be understood from the annexed figure of a small apparatus.—Conceive the plant in this case to be surrounded by a stout rectangular iron frame (*a*), which is placed upon the ground. Then let the spades *b b b* be forced nearly perpendicularly into the soil within the iron frame. Next suppose an extension rod (*c c*) to be so applied to the handles of the opposite spades, as to drive them outwards by the leverage at *c* acting upon the fulcrum (*a*); the result will be that the ball of earth enclosed between their blades will be converted from a cube into a wedge with the point downwards, by which means the earth becomes secured within the four spade blades. After this a collar is fixed to the stem of the plant, and to the two opposite sides of the iron frame (*a*), grasping the plant firmly and preventing its slipping. The next point is to attach to the four corners of the iron frame as many hooks (*d*), through which is passed a pair of handles, such as are used for a sedan chair (*e*); and then the plant is ready to be lifted,





which is done by two or more men raising the plant by its handles. Thus raised, it can be removed to any other place without disturbance, and a hole having been previously prepared, left there by unfastening the collar, withdrawing the spades, and uncoupling the iron frame.

The time consumed in this operation need not exceed ten minutes for an apparatus worked by four men.

In the case just described, the lift is taken by two or four men acting upon a pair of horizontal bearers. But when great weights have to be moved, then mechanical power is applied, as shown in the accompanying representation of the machinery actually employed on Saturday. In this case the frame (*a*) is of very strong T iorn. The spades (*b*) have blades three feet long and iron handles; and within the handles passes a bar of iron (*d d*), to receive the lateral pressure of the extension rods. Two beams of timber (*x x*), lie across the frame, and hold fast the collar (*c c*), by which the trunk is grasped. Matters being thus adjusted the mass is ready for the lift, which is managed in the following manner: A pair of strong timber trucks (*f f*), are backed up to the two ends of the frame, each having above its axle a powerful wooden upright (*y*). Upon this is laid a frame or platform of timber (*g*) through which pass vertical screws (*h h*), attached to a powerful iron coupling, and working in collars secured to the platform. The screws are finally connected with the lower apparatus which secures the roots of the tree by chains passed through the couplings. This done the machine is ready for work. The lift is taken by means of the screws (*h*), which are worked by men standing upon the platform. When the mass is raised out of the ground the trucks are chained together, and may be moved in any direction required. On one of the trucks a crab (*i*) is shown; this is for the purpose of moving the machinery by means of a block and tackle secured to some tree or post, when circumstances are favorable to its employment.

The tree, earth, and machinery moved on Saturday were computed to weigh something more than thirteen tons. The tree, a black Italian Poplar, was fifty-five feet high. In half an hour the tree was lifted out of the ground, without swerving; and in the course of the afternoon was safely drawn to a hole forty feet off, into which it was so lowered as to be placed perpendicularly, although when taken out of the ground it was very considerably out of the upright. Had the tackle been better, far less time would have been consumed; but the screws were bad and difficult to turn, and the horizontal arms by which they were worked were inconveniently placed, all which caused a needless waste of time.

The spectators admired the principle of Mr. M'Glashan's plan, and were gratified at the successful manner in which his work was done. For ourselves, we are disposed to believe that this method of transplanting is susceptible of modifications which will render it generally useful. The inventor desired to test his power as severely as was possible, and for that purpose he selected a tree very much larger than it is often necessary to remove. The world, in general, requires a smaller and less cumbrous apparatus; which can, of course, be constructed with strength proportioned to the weight that has to be lifted. For example, a pair of strong barrows might be substituted for the timber drags, everything else being reduced in proportion; or the apparatus need not be stronger than can be worked by hand labor; and this it was evident that the gardeners thought would be most generally required.

The advantages of the apparatus consist in lifting a tree and keeping it upright while being transplanted, instead of being broken and bruised by being thrown on its side, as is invariably the case in all other modes of transplanting; and in preserving the earth round the roots, either wholly or for the most part. A good deal of earth, no doubt, fell out on Saturday from within the spade-blades, owing to the excessively soft, wet state of the soil; but Mr. M'Glashan, in his specification, expressly declares that in some cases, in order to prevent the crumbling away of earth, it is necessary to enclose in a wooden box the lower part of the apparatus after it is lifted.

The objections to it may be stated to be the necessity of cutting through all roots which spread beyond the area enclosed by the spade-blades; but we think that very little ingenuity will get over this difficulty, even if increasing the size of the apparatus should be impracticable. A greater objection is the inability of spade-blades, driven perpendicularly, to pass through gravel; and, unless forks are substituted for broad blades, it is not clear how this is to be surmounted. It is to be remembered, however, that Mr. M'Glashan's apparatus has never yet been applied to

practical use; and we entertain no doubt that it will receive very important improvements as soon as it comes into the hands of those who are conversant with the removal of trees.

Since the above was written, we have been informed that a machine similar to Mr. M'Glashan's was contrived some years ago by Mr. Strutt.

Hovea Celsi.—This is universally admitted to be one of the most beautiful of greenhouse plants; but it is also one of the most difficult to induce to form what is termed a handsome specimen. It is easy enough to grow the plant to a considerable size, but its straggling habit, and tendency to run up without producing lateral branches, render it no easy matter to make it anything approaching a compact, well-furnished specimen. Well propagated, dwarf bushy plants must be got to begin with. They must not be pot-bound or stunted, for it is almost impossible to form handsome specimens of plants that have not been well attended to from the first; size is of little importance, but whether small or large, the plant selected to form a specimen should be in vigorous health and furnished with branches in proportion to its size. Supposing plants of this description to be procured about this season, the first thing is to examine the shape of the roots; and if these are abundant and healthy, shift into pots a size larger. Potting is a very simple operation, but in the case of this plant, as in that of many others, future success very much depends upon the manner in which it is performed, especially during early stages of growth. Efficient drainage should be carefully provided by means of a proper arrangement of a moderate quantity of potsherds, covering these with a thin layer of fibry pieces of the soil, intermixed with plenty of sharp sand. After potting, the plants should be placed where they will not be exposed to drying currents of air, and water must be very cautiously administered till the roots strike into the fresh soil. In the meantime, however, a moist atmosphere, and a sprinkling overhead with the syringe morning and evening, will be beneficial. Nothing is more injurious to this plant than allowing it when young to suffer for want of pot room; but beginners must avoid the one-shift system, otherwise they will probable find this extreme more ruinous than the opposite. By giving a small shift as early in spring as it may be necessary to do so, and a more liberal one—but this must be regulated by the vigor and wants of the plants—early in June, both extremes will be avoided. When the plants attain a useful size one shift in a season will be sufficient, and when in large pots, with a careful and liberal supply of water at all seasons, and an occasional watering with weak, clear manure water while making their growth, they will be found to do very well for several seasons without shifting.

Immediately after potting means must be used to secure a compact bushy habit of growth, and the best method I have ever found of effecting this is removing the more prominent buds by cutting back the shoots, and bending and pegging down the more vigorous ones, so that the buds desired to start into growth may be on the highest part of the shoot; this, with attention during the growing season, to regulate the growth by stopping over-luxuriant shoots, and bending them down, will be found to effectually correct the naturally straggling habit of this otherwise first rate plant; and if these trifling attentions are commenced early and persevered in, well-formed specimens will be the result. During the spring months the plants will enjoy a situation close to the glass, where the night temperature may average about 50°, and 10° or 15° higher by day; and where a moist atmosphere can be maintained, and air admitted freely on every favorable opportunity, without exposing the plants to cold currents. When mild weather sets in, they should be removed to a cold frame, which will be found an excellent situation for encouraging active robust growth during the summer; but some attention will be necessary to guard against a sudden change of temperature to which the plants might be exposed, especially if cold cloudy weather occur immediately after their removal to the cold frame; this, however, will be easily managed by keeping the lights close, and covering at night, or admitting air, according to the state of the weather. Unless the frame occupies a position shaded from the mid-day's sun, a thin screen should be thrown over the glass for a few hours in the middle of bright days, and air must be freely admitted day and night, merely putting on the lights during fine summer weather to assist in maintaining a moist atmosphere, by shutting them down for an hour or two, after syringing in the evening, and to protect the plants from heavy storms of rain. They must

be well attended to with water, and they should be sprinkled over-head with the syringe morning and evening, unless during cold cloudy weather; it should, however, always be ascertained before syringing whether the soil requires water, as the moisture on the surface occasioned by the syringing is very apt to deceive persons not much accustomed to the management of plants, and the ball is thus unknowingly allowed to become much too dry. Care must be exercised to get the wood properly ripened in autumn, and shading should be discontinued in August, and the plants fully exposed to sun and air, merely using the lights to protect them from heavy rains. They should be removed to a light airy situation in the greenhouse by the end of September, and kept cool, and very carefully supplied with water during the winter months.

Plants thus treated would probably blossom profusely in spring, but allowing them to do so would be a considerable loss of time, and those who aim at making large handsome specimens in the shortest possible period should cut back the shoots early in spring, so as to remove the blossom-buds, and this should be done at least a fortnight previous to removing them to a situation to encourage growth. This will allow time for the buds left to swell, and they will break more regularly and freely than if the cutting back were deferred until the plants were placed in a growing temperature. If the directions for stopping and training have been so far properly practised, nothing further in this way will be necessary at present; but when active growth commences, the same attention will be required this season as last, and the plants should be treated in every way as recommended for last season. If all goes on well, they will be nice sized plants before winter, and may be allowed to blossom in spring. While in flower they are well worth shading, which prolongs considerably the duration of the blossoms. When done blossoming the shoots should be pruned back to wood buds, and thinned out if necessary by cutting out weakly ones, and staking or pegging out the others, and when the buds start into growth a moderate shift may be given.

For soil, take three-fourths rich turfy peat, one-fourth turfy sandy loam; break these into small pieces, add about one-quarter sharp silver sand, and a sprinkling of clean potsherds, and intimately mix the whole together.—*Alpha, in Gardeners' Chronicle, March* 5.

Gesnera oblongata.—When well managed this is decidedly a handsome plant, and it is more accommodating in its habits than most varieties of the genus, growing and flowering as it does for months in succession during winter. It is readily increased by means of cuttings, which may be obtained in spring from young growing plants. Firm, short-jointed, well-ripened pieces should be selected for the purpose, inserting them in sandy, peaty soil, covering with a bell-glass, and plunging in a gentle bottom heat of from 70° to 80°, where, in the course of a month or six weeks, they will be sufficiently rooted to bear potting off singly in small pots. It will be necessary to place the young plants in a rather close, moist, warm situation until they have become well established, when they may be removed to a cooler position, and allowed more light and air. During summer they cannot have better accommodation than a cold frame, kept moist and rather close, and shaded from the forenoon's sun; here they will make rapid progress, and must be shifted as may be requisite to afford sufficient space for the roots. In order to secure a dwarf compact form it will be necessary to stop the leading shoot occasionally; and if thrips make their appearance, and this plant when kept growing during the early months of summer is rather subject to them, tobacco smoke should be applied the moment they are perceived, and as often as required to eradicate them. As soon as damp cloudy weather occurs in autumn, remove the plants to a situation near the glass in a house or pit, where the night temperature can be kept at about 50° or 55°, which will be sufficiently warm to promote active growth. The plants may be allowed to remain here till about Christmas, when it will be advisable to remove them to a temperature some 10° lower, giving water very sparingly, in order to afford them a season of rest; but this sort must not be treated, when in a dormant state, like the tuberous rooted varieties which require no water during that period; a small allowance, however, will be sufficient, merely enough to prevent the soil from becoming excessively dry.

If the plants are wanted to flower during the winter months (and with early propagation, and good management afterwards, nice sized specimens are easily obtained in two seasons), it will be

advisable not to excite them into growth till towards the beginning of June, when they may be placed in a rather close, moist situation, near the glass, in a pit or frame where they can be slightly screened from the mid-day sun. See that the soil is got into a moist healthy state; and it will also be advisable to examine the roots, giving a small shift to such as require more pot room. Maintain a moist atmosphere; keep the plants clear of insects; and stop the leading shoots occasionally, in order to induce compact bushy specimens. Towards the middle of July a second shift will probably be required, and this should be into the flowering pots; and as the plants are intended to continue growing and blooming throughout the winter, a liberal shift should be given. Water cautiously, and keep the atmosphere moist and rather close till the roots have got hold of the fresh soil, when air may be admitted rather freely, shutting up early in the afternoon with a moist atmosphere. In September they should be removed to where the temperature can be kept to about 55° at night, and light and air afforded to mature the wood, and induce the production of blossom. The best situation for the flowering specimens during winter is one where they will receive all the light possible, and where the temperature may average from 45° to 50° at night, allowing it to rise some 5° before giving air; and if properly supplied with water, and kept clear of insects, they will present, as I have already stated, a very pleasing appearance for some three or four months—a longer period than most plants remain in blossom.

When the flowers begin to be produced too thinly to be effective, the plants should be removed to a cool, shady situation, sparingly supplied with water, and allowed a season of rest; this ought to be attended to before they cease to produce flowers, which would not take place until the health of the specimens would be greatly injured. My practice is to remove them to a cool, shady situation in April, and when the weather becomes mild and settled, say about the middle of June, to place them against a north wall, where they are safe from rain and drip, giving them very little water. Shortly after allowing the plants to go to rest, the shoots should be thinned and cut back, so as to secure a dwarf, bushy habit of growth at the commencement of next season. Early in August they should be removed to a situation similar to that recommended for their growth last season, but they may be previously turned out of the pots; and if the soil is sour or in an unhealthy state, reduce the balls sufficiently to clear away the bad soil, repotting in the same sized or smaller potts; a moderate shift should also be given, either now or in the course of a few weeks, to such as require it. In the case of plants the balls of which have to be considerably reduced, a rather higher temperature should be afforded them until they are fairly established in their pots; and plants that are at all pot-bound will be greatly benefitted by an occasional watering with weak, clear manure water. With careful management, and occasionally reducing the balls, so as to afford the roots a portion of fresh soil, the plants will last in good condition for many years; but it is advisable to keep up a supply of young ones, as these are more easily managed than old specimens.

Good, rich, turfy peat, and light, sandy, turfy loam in the proportion of two of the former to one of the latter, with a liberal mixture of silver-sand and broken potsherds or carcoal, form an excellent compost for the growth of this plant. The peat and loam should be carefully broken up with the hand, and only the best pieces selected, and it should be well intermixed with the sand, &c., before use.—*Alpha, in Gardeners' Chronicle.*

The Fuchsia and its Culture.—Notwithstanding all that has been written respecting the cultivation of the Fuchsia, it is seldom that we see well grown specimens of it, more especially about London; but in the midland counties matters are managed somewhat better. We there find Fuchsias such as they should he, both as regards form, size, and profusion of bloom. Few, we think, who have been in the habit of attending the Birmingham shows will question the truth of this assertion. We trust, therefore, that the following remarks respecting this useful flower, by Mr. Mayle, of that city, (as given in the "*Scottish Florist*" of the present month,) will be read with interest. *King Charming* and *Incomparable* are both sorts, we believe, of Mayle's raising. and we are also indebted to him for many other fine varieties. He has paid much attention to this favorite flower, and therefore his instructions respecting it may be followed with confidence. He says, "the soil best adapted for healthy growth is rich sandy loam from the top spit

of a meadow, one part; real turfy peat, rubbed through a coarse sieve, two parts; and dung from a hot-bed rotted into mould, one part. As soon as you have brought your plant from the nursery, turn it out of the pot, and if it is already in light soil put the ball just as it is into a pot a size larger. If it is in stiff soil, soak it in water until you can wash all the soil out; and in repotting carefully spread the roots, and see that the soil is well thrust through every portion, so that it may be solid. Let the plants be placed in the green-house until they begin to move, and then make up your mind whether they are to grow pyramidally or shrubby; if the former, let the main shoot go up, and regulate the side ones; if the latter, stop the shoot back, using the top for a cutting. If the shoot be long, it may be cut into lengths; one joint below the soil, and one or two above, are quite enough to strike. In the summer, a handglass on a common border will be found a sufficient shading from the sun. When the plants have struck, let them remain out of doors, or in a cold frame, but shade them from the mid-day sun. By these means, the dark varieties will be improved, and make handsome plants. The light ones will not bloom white; they will have a pink tinge on them, and will scarcely be recognised: and therefore it is better to bloom them under glass. There are, however, two or three rules to be attended to under all circumstances; first, to shift them whenever the roots appear through the soil; secondly, to give all the air possible in mild weather; thirdly, to water them thoroughly when watering; fourthly, to stop all rambling shoots; fifthly, to shade them during the heat of the day when in bloom; and sixthly, to let them rest during the greater part of the winter. In saving seed, never calculate on good flowers from coarse varieties; cross the fine ones with the large flowers if you will, but I recommend those of fine texture and habit. I herewith annex a few first rate varieties raised and sent out in this part of the country; at the public exhibitions they have invariably taken the lead. White varieties: *Hebe, Diadem of Flora, Bride, Lady Dartmouth, Purity.* Dark varieties: *Champion of England, Standard of Perfection, Prince of Wales, Scarlatina reflexa, Game Boy, Defiance, Roscola.* But the above fine varieties must bow to those which are coming out from this quarter this season."—*G. B., in Gardeners' Chronicle.*

Mr. Macintosh's Nursery, Maida Vale.—We remarked here an excellent specimen of the charming Veronica Andersonii, in the shape of a pryamidal bush about three feet high and two feet six inches across at the base, the under branches hanging down so as to partly conceal the pot. This plant, which is exceedingly unique in its appearance, was raised from a cutting about two years ago. With the exception of very severe weather, when it received the temporary protection of a shed, it has, we believe, all along been kept out of doors, and continually growing —Mr. Macintosh's plan of managing such plants, when fine specimens are wished for, being to grow them one season and bloom them the next. The plant in question has, however, hitherto only been permitted to make wood, the flowering being prevented by a regular system of stopping, by which its present handsome shape has been acquired. It is just now showing bloom, which will doubtless be developed in succession during the whole of next summer, and possibly even up to Christmas. It may be worthy of remark, that this plant has been grown entirely without sticks, which Mr. M. thinks unnecessary in the case of hard-wooded plants in general. This is certainly, as we have often stated, one of the most handsome of Veronicas, and a sort which, at no distant date, must be as common as a Myrtle in every cottager's window. We also observed here a nice compact plant of the old-fashioned *Agathæa cœlestis*, which has been blooming for some time back, and is very useful for cutting from, its blue flowers having a cheerful effect in bouquets at this season of the year, when such colors are scarce. By growing a few plants of this during the summer, and stopping them back, they would come into flower now, and form not unattractive objects among other things in a conservatory or a cool green-house throughout the winter.—*Gardeners' Chronicle.*

Editor's Table.

North Western Fruit Growers' Association.—In the February number, page 92, we gave some account of the proceedings of this Association. We now proceed to notice the discussion on qualities of fruits:

Discussion on Apples.—The *Autumn Strawberry* was recommended for further trial in the West.

"Cyrus Bryant has fruited it several years; a fair grower, and abundant bearer, alternate years—ripe about first of September; juicy, with a very slight astringency.

"Mr. Phœnix has fruited it several years, esteems it highly—very productive—would plant it in a collection of six varieties in his locality.

"Mr. McWhorter—Its flavor is exceedingly delicate, of tender texture. Esteems it an excellent fruit. Passed as recommended by Committee."

With us, the *Autumn Strawberry* is a crisp, juicy, high-flavored fruit, uniformly fine. We think it bids fair to be worthy of very general culture. We are glad to hear such favorable reports of it from the West.

Sweet Nonsuch, (local name) from the general tenor of remarks made by several cultivators, this seems to be a hardy, vigorous, productive, sweet, baking apple.

Monarch.—We received this apple several years ago, from Mr. J. A. Lazell, of Columbus, Ohio, and it has borne regular abundant crops of large, very beautiful and good fruit. The following remarks were made concerning it:

"Dr. Pennington has fruited it several years; tree a rapid grower, good, though not a prolific bearer, has been, with him, profitable—knows no early apple of its season superior—would recommend to bud or stock-graft, tender root-grafted.

"Mr. Bellangee received it from Ohio as *Monarch Sweet.* It is of an agreeable sub-acid flavor, has ripened last of August, in use through September. A beautiful fruit, sells readily at good prices in market.

"Mr. Avery considers it far superior to *Maiden's Blush.*

"Mr. S. M. Coe has proved it an early bearer."

Fall Pippin.—We have been anxious to know how this famous apple would adapt itself to the soil and climate of the West. The following remarks give unfavorable indications:

"President had it bear plentifully; soil with considerable clay.

"Mr. Finley's experience ditto; soil alluvial.

"Cyrus Bryant—Trees planted in 1837, have never borne a dozen apples in a season; soil, clay loam; hopes *Hawley* may supersede it.

"Mr. McWhorter has seen a few trees bearing well.

"Mr. Williams—Where stock-budded or grafted, has seen it bear well, has several trees root-grafted, 12 years old, have never borne but little. Believes the different modes of propagation a subject of great importance to fruit cultivators in the West.

"Mr. Loomis—It bears profusely in Northern Indiana, generally root-grafted; soil, oak opening.

"Mr. AVERY has five trees planted in 1840; had first good crop this year, say five bushels in all; soil good prairie. Would value one tree of *Rambo* or *Rawles' Janet* worth seven of *Fall Pippin; Belmont* also superior, and *Fall Wine* is generally preferred to it."

The difference between the success of Mr. LOOMIS in Indiana, and that of the gentleman in Illinois, is very striking and worth further inquiry.

Red Gilliflower.—Recommended for further trial in the West.

Yellow Bellflower.—Recommended for general cultivation, by a vote of 12 to 11, (other members not voting)—"to be budded or stock-grafted" instead of root-grafted, the general impression being that it does not succeed well root-grafted.

Dominie.—All spoke well of its quality and productiveness; and it was passed as "very good for general cultivation."

Rawles' Janet.—Generally considered very productive, and varying in quality from good to *very* good, according to locality, exposure, &c. We apprehend that, like our *Spy*, it needs a full exposure to the sun to bring out its excellence. Nothing said of the best mode of propagating it.

Winesap.—Only alluded to by two speakers, and they pronounce it productive and good.

Willow Twig.—Passed without discussion. This is one of the best long keepers of the West.

Fallawater.—Known also in the West as *Mountain Pippin*, *Tulpehocken* and *Pound* apple—highly recommended by three speakers, and passed as good for general cultivation.

White Winter Pearmain.—Unanimously pronounced valuable and productive. Passed as best, and recommended for general cultivation.

Belmont.—This is a beautiful and excellent fruit, but quite variable. We find it succeeds well in Western New York, and particularly so in Northern Ohio, and in certain soils and localities in Illinois. The fruit is somewhat liable to drop prematurely. Mr. ELLIOTT advises to cultivate it on dry, elevated soils, and to gather early. Recommended for limited cultivation.

Vanderveere.—Pronounced variable. Mr. MCWHORTER has seen it bear full crops on a clay soil—"hickory barrens," similar to the "oak openings" of Michigan. Mr. LOOMIS, of Northern Indiana, has had it do well in all respects on a clay loam. It needs good culture. Recommended for limited culture.

Talman Sweet.—"Recommended for general cultivation for baking and stock."

Detroit Red.—Passed as not sufficiently known, being confounded with *Black Pippin* and *Black* apple.

R. I. Greening.—From the testimony of eight or nine speakers the cultivation of this famous fruit has not been successful so far in the West, and more especially when root-grafted. One speaker (Mr. BRAYTON) goes so far as to doubt whether it would ever bear when so worked. [This is very remarkable. The finest trees of this sort, and indeed the best orchards in Western New York—and the world could not produce more healthy or productive trees—are all root-grafted. But we have spoken on this particular point in our first article]. "Passed as not sufficiently known to be recommended." This strikes us as a strange decision after several members having expressed decided opinions, based upon the experience of 15 or 16 years cultivation.

Roxbury Russet.—The experience of Illinois cultivators is unfavorable, in some cases not keeping well, and in others the fruit is spongy. Blossom buds injured, and frequently injured in the winter near the ground surface. Considered generally as being much better budded than root-grafted. Mr. LOOMIS, of Indiana, said with him "It had no competition in June.

and thinks more money can be made from it than any other variety. His trees are root-grafted. Has never noticed any difference in the productiveness of root-grafted and stock-worked trees."

Jonathan.—Recommended for further trial. Highly spoken of by Mr. BRYANT of Illinois, and Mr. LOOMIS of Indiana.

Ladies' Sweeting.—Not sufficiently known.

Hubbardson Nonsuch.—For further trial.

Baldwin.—Generally a failure in Illinois. Mr. LOOMIS said it bore well in Indiana.

Swaar.—Recommended unanimously for general cultivation, "when worked standard high, on thrifty seedling stocks."

Red Astrachan and *Hawthornden.*—Favorably mentioned.

Pryor Red.—Spoken of as a tardy and shy bearer.

The association adopted a resolution to petition the Legislature of Illinois to make fruit stealing larceny; also, appropriate resolutions on the death of A. J. DOWNING; and another, recommending the *Western Horticultural Review* as worthy the patronage and cordial support of every horticulturist in the West, being particularly adapted to that soil and climate. We are glad to see the *Review* thus recommended—first, because it deserves it; and second, because the information it imparts is much needed. It strikes us that the western cultivator stands peculiarly in want of minute and varied information on account of the innumerable difficulties of the climate.

SCHOOLS FOR YOUNG LADIES.—A garden should be considered a necessary—even an indispensable—appendage of every institution of learning. There both the mind and body of pupils and teachers, wearied and worn by study, might find recreation at once invigorating, refreshing, and instructive. What an influence might thus be exerted upon the tastes and habits of the rising generation! How the health and strength of delicate youth might be promoted, and all studies connected with natural history be aided! Are these things not worthy the attention of parents who are sending their children to district schools?

For young ladies, a garden is peculiarly important, and it surprises us to hear of parents sending away their daughters to some distant city, shutting them out from the pure air and from all sources of retired and healthful recreations, in most cases, for the flimsy honor of a name.

This matter has been brought to our mind now, by the prospectus of Mrs. WM. G. BRYAN, of Batavia, whose school now occupies the fine mansion of the late Hon. DAVID E. EVANS, attached to which is one of the largest, oldest, and finest gardens in Western New York. Batavia is a quiet, beautiful village, distinguished alike for its cultivated, pleasant scenery, and tasteful, polished society. Accessible, too, by railroads from every quarter, it is, in all respects, eligible for such an institution, and it gives us pleasure to aid in making it known.

UNIVERSITY EDUCATION IN MICHIGAN.—The increase and prosperity of agricultural journals in Michigan is not the only sign of a deep and general interest in rural pursuits. We are glad to learn that in the University at Ann Arbor there is now an agricultural course of Lectures, conducted by Mr. CHARLES FOX, senior editor of the *Farmers' Companion*, and Drs. SAGER and DOUGLASS. We hope that agricultural lectures will soon be regarded as an indispensable portion of University education in every State of the Union. The study of agricultural science needs to be elevated. It has too long been permitted to occupy an unworthy position.

Blackberries.—We find the following in the proceedings of a late meeting of the American Institute Farmers' Club, as reported in the *Agricultor:*

"The New Rochelle Blackberry.—The Secretary reminded the Chair that Mr. Lawton, of New Rochelle, Westchester Co., was present, and that he was the gentleman who exhibited the remarkable stalk of a blackberry, which was then on the table; whereupon, the Chair requested Mr. Lawton to give the Club some information regarding this remarkable new variety of fruit.

"Mr. Lawton stated that one of his neighbors discovered, some six or eight years ago, a bunch of blackberry vines by the side of the road, of different quality from the common high blackberries, and so much superior that he was induced to transfer them to his garden. From this small beginning they have been propagated as much as possible. Mr. Lawton first obtained them in 1848; it is his intention to set ten acres as soon as he can get the plants. He stated that the stalk exhibited had been headed back, so that it resembled a bush about four and a half feet high, with a spreading head, which he presumed from his knowledge of the general yield, had borne a gallon of fruit.

"The character of these berries is very unlike the fruit of the common high blackberry vines, which is long and full of seeds, while the new variety is nearly round, very pulpy, the pipe being large, in which the seed are entirely hid from view. He stated that he had measured many berries that were three inches round; that the general size and shape were as near like Hovey's seedling strawberries, as anything he could compare them to. The flavor of the fruit is sweet and rich, to a remarkable degree, and vines long bearing. His first crop ripened July 28th, and continued till the second week of September. The next, August 4th, and continued four weeks. Last summer, owing to the great drouth, they only continued about three weeks in full bearing. The vines grow almost equally as well in shade as in open ground; and if an opportunity is given, will climb twenty feet into a tree.

"Mr. Lawton sold his berries last summer to a New York dealer for ten cents a basket—equal to about twenty-five cents a quart—the buyer picking them himself. It is the opinion of Mr. Lawton, that this is an entirely new variety of the blackberry; and besides the greater value of the fruit, they bear garden culture much better than the other, or common variety. The demand for new plants is greater than can be supplied at present moderate rates—the price now being fifty cents."

Glover's Artificial Fruits.—In giving an account of the Fair of the Metropolitan Institute, in Washington, the *Genesee Farmer* thus speaks of the exhibition of Mr. Glover:

"In the Fruit line, nothing could well exceed in beauty and truthfulness Mr. T. Glover's artificial fruits, of almost every kind grown in the Northern States. His display of pears, apples, plums, cherries, and strawberries, deserves especial commendation. Mr. G. resides at Fishkill, N. Y., and is constantly adding to his collection, which we hope to see purchased and placed in some agricultural museum to which the public may have constant access for study and improvement. The insects injurious to fruit trees and fruits, are true to the life; and the plan is equally applicable to all the larger insects that attack the plants and animals owned by man."

Notices of Books, Pamphlets, &c.

Chemical Field Lectures for Agriculturists. By Dr. Julius Adolphus Stockhardt, Professor in the Royal Academy at Tharand. Translated from the German. Edited, with Notes, by James E. Teschemacher. Cambridge: John Bartlett. 1853.

There is so much that is technical, speculative, and visionary in most of the writings on the Chemistry of Agricture that the title of "Chemical Lectures" will be somewhat uninviting to plain, practical cultivators; but we can assure them that this is not a book of

speculation. On the contrary, it is as plain and intelligible as any book can possibly be, and treats the all-important questions concerning the composition, relative value, and mode of applying the various substances used as fertilizers, in such a way as every farmer and gardener can perfectly well understand and appreciate.

No sensible man, who cultivates the soil, will say, "I do not need such a book, I know all about manures." If we heard any one say so, we should fear that he was hopelessly ignorant; for however old, or wise, or experienced we are, we have much to learn; and in regard to the best and most economical manners and modes of applying manure in such a way as will best promote the growth of the various field and garden products, we have nearly everything to learn. We have looked through but two or three chapters of this book, yet we have gleaned a few very useful hints that we shall soon carry into practice.

The following extract in relation to guano conveys an idea of the simple and practical character of the work:

"For a thorough manuring, the average reckoning is 4 cwt. of guano to the Saxon acre, or a full 2 cwt. to the Prussian Morgen.* Yet this amount, according to climate and soil, more particularly in mountainous districts, is frequently exceeded; while, on the contrary, a less quantity may be sufficient where climate and soil are peculiarly favorable.

"On the *mode of application*† the following remarks must be made. First, the guano must be *prepared*. This preparation is very simple, and consists in reducing it to a homogeneous, pulverulent mass, and mixing it with earth. The first is effected upon a barn floor, by sifting and threshing. The finer portion is first sifted off; then the remaining lumps and fragments of larger size are threshed, and again sifted, until they are likewise converted into powder. The last portions of the residue are often so yielding and viscid, that they flatten upon being struck with the flail, and will not pass through the sieve. In this event they may be either beaten together with a brick or stone, by which means they are easily reduced to powder or they may be added to the compost heaps which are absent on no good farm. The sifted guano should now be mingled with from twice to three times the same quantity of earth, or with a mixture of earth and ashes, and the whole shovelled together, until a thorough and entirely uniform mixture is effected. The earth must possess the ordinary state of moisture, in which it easily absorbs the guano without forming into balls or lumps. It is a good plan to make the mixture at least from four to six days before it is scattered over the soil; and still better to undertake its preparation at a convenient time, before work presses on the farm, for it very often happens that farming labor is crowded into sowing time, and the mixture of the guano with earth is then executed hastily and unsystematically, or perhaps not at all, the consequences of which are very injurious. If, however, the mixture is already at hand, these prejudicial consequences are avoided. The scattering in the field

"* Literally, as much land as a man can plow in a morning; — about an English acre.

"† It would not be proper to pass over this mode of preparation without some further notice.

"If a glass rod moistened with muriatic acid be held an inch distant from the surface of a saucerful of Peruvian guano just taken from the bag in which it is imported, a white cloud will be immediately perceived. This is formed by the union of the ammonia rising up and evaporating from the guano with the fumes of the muriatic acid, rendering it manifest that ammonia escapes from guano very readily at the usual temperature of the atmosphere, — of course more abundantly in hot than in cold weather. Hence it is evident that the exposure during the pounding and frequent sifting here recommended must be very injurious to the guano, and cause the loss of much of its most valuable ingredient.

"It is much preferable to start the bags on the barn-yard floor, and, after spreading out the guano an inch thick, quickly to cover it with powdered charcoal or fine burnt bone-black, the refuse of sugar refineries, or with dry gypsum, or with clay which has been rendered friable by exposure to frost and then broken up and dried moderately, or with all these substances together; thus spread layer upon layer alternately, and finish by covering up with the empty bags, and putting over these a final coating of any of these absorbing substances. In this way the ammonia will suffer very little diminution, and the mixture will be sufficiently incorporated when taken on the land, and plowed or drilled in, without the labor and loss attendant on turning over. The small lumps may be left in without prejudice; the few large ones may be easily separated by hand, and broken afterwards. — J. E. T.

is best managed in the same way as that in which lime is usually put upon the land, or by spreading from a seed-bag. It is well to strew it upon the last plowing some two or three days before introducing the seed, and then lightly harrow; on a light soil, to roll, and after this to harrow in the seed. Moist weather, during its application to the soil, (especially in spring or summer sowing,) exerts a very beneficial influence upon the action of guano.

"The addition of earth is beneficial in a great variety of ways. Pure and good guano is so rich in ammoniacal salts, as easily to corrode the tender roots of plants, more particularly in dry weather; by mixing it with earth, it is so enveloped and weakened that this injurious effect is no longer to be feared. In this way, moreover, just as in the covering over muck heaps with earth, the possible escape of æriform manuring elements from the guano is cut off, since the porous earth has the property of absorbing and firmly holding these substances. Finally, by the addition of earth a more uniform distribution of the mass upon the land is rendered practicable, and the flying off of dust during dispersion prevented;—an inconvenience that otherwise is likely to occur, and may occasion inflammation of the eyes and other annoyances to the laborer.

"With *potatoes, green crops, roots, &c.*, a handful of the mingled earth and guano may be given to every plant in dibbling or planting. A little more than a quarter of an ounce of bird-manure, costing the fourth part of a farthing, serves in this way as an exclusive manuring for a plant. With other manures a third or fourth part of this quantity, whose value will not therefore exceed the twelfth or sixteenth of a farthing, causes a very marked increase of growth. Equally certain results are obtained if the mixture of earth and guano is scattered with as great uniformity as possible in the ridges in which potato sets are laid, or if, in case the guano should not at that moment be at hand, it is strewed over the surface of the field after the young plants have already sprouted up but may still be passed over with the harrow;—a mode of treatment that is confessedly of great advantage when the potatoes have attained the height of some four inches above the ground, and must soon be earthed up. *Garden produce* may be treated in either of these methods; for such plants, however, as also for grass and meadow land, watering with a solution of guano may be strongly recommended. For this purpose, one part of bird-manure should be treated with at least from 80 to 100 parts of water; since, if too strong, the solution of guano exerts a corrosive action upon young and tender plants.

"For top-dressing, which should be employed as circumstances may make advisable, in the autumn or early spring, guano is in like manner most judiciously employed when mixed with earth."

The work is for sale by D. M. DEWEY, of Rochester, who has been kind enough to place it before us.

A PRACTICAL TREATISE ON THE CULTURE AND TREATMENT OF THE GRAPE VINE. By J. FISK ALLEN.

The third edition of this work, enlarged and revised, has just been issued by C. M. SAXTON, of New York, the well known, enterprising agricultural book publisher. It is a useful and much needed book, and especially at this time, when Grape culture is attracting so much attention and inquiry. Mr. ALLEN is a practical and eminently successful Grape grower himself, and therefore well fitted to prepare a work on the subject on which people may rely with safety. The construction of graperies, the preparation of borders, the propagation and management of vines at all seasons and under all circumstances, the selection of varieties, and the treatment of diseases, are all discussed with great care and minuteness. We are given not only the experience of the author, but of the most successful growers of Grapes both at home and abroad. If the book be at all faulty, it is in its profuseness of extracts; but these are subjects on which we cannot know too much.

This edition does not differ materially from the previous one, except in its appearance, which we regret to say is not so good. The new matter consists principally of a chapter

on the Culture of the Grape in Florida, by Hon. A. G. SEMMES; a chapter from Dr. UNDERHILL, on the Vineyard Culture of the Isabella; and notices of some new varieties of Grapes, the most important of which are some hybrids produced by Mr. AMOS W. STETSON, of East Braintree, Mass., and our correspondent, Dr. W. W. VALK, of Flushing, L. I. We observe, too, that some alterations are made in the special lists of varieties, and especially that for a retarding house. This difference will be seen by comparing the following lists:

SECOND EDITION.

5 Vines Black Hamburg, including Wilmot's new Black Hamburg.
2 Muscat of Alexandria.
2 Zinfindal.
5 Black Lombardy.
2 Charlesworth Tokey.
3 Wortley Hall Seedling.
2 Portien Noir.
3 Tottenham Park Muscat.
1 Syrian.
1 Red Chasselas.
1 Black Prince.
5 Old St. Peters.
1 Black Frontignan.
1 Common Hall Muscat.
1 Bordelairs.
1 Escholata Muscat.
1 White Nice.
1 Red Lombardy.
1 Queen of Nice.
*1 Josling's St. Albans.

THIRD EDITION.

6 Vines Black Hamburg, including New Black Hamburg, Victoria Black, and No. 16 Black Hamburg.
2 Muscat of Alexandria.
1 Zinfindal.
5 Black Lombardy.
3 Wortley Hall Seedling.
3 Portien Noir.
1 Tottenham Park.
3 Syrian.
1 Black Damascus.
1 Black Prince.
1 Old Black St. Peters.
1 Common Hall Muscat.
1 White Hamburg.
1 Escholata Muscat.
1 White Nice.
1 Red Lombardy.
1 Queen of Nice.
1 Bowker.
1 Bishop.
1 Black Portugal, or Farrar.
1 Prince Albert.

THE COLD GRAPERY: From direct American Practice. Being a Concise and Direct Treatise on the Cultivation of the Exotic Grape Vine under Glass, without Artificial Heat. By WILLIAM CHORLTON, Gardener to J. C. GREEN, Esq., Staten Island, N. Y.

In another place we notice the issue of a new edition of *Allen's Treatise on the Grape*, and here we have another touching the same subject. Mr. CHORLTON'S, however, differs from Mr. ALLEN'S in this, that instead of treating of Grape Culture in general, it is devoted exclusively to the *Cold Grapery*. He makes this a "speciality," and what he has written is based upon his own very successful practice. The whole subject—construction of houses, preparation of borders, planting, selection of varieties, pruning, training, &c.—is treated in a plain, simple manner, giving a great amount of information at a small expense both of money and reading. We commend the perusal of this treatise to all who desire information on this subject.

CATALOGUES.—Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs and Plants, cultivated and for sale by ANTHONY & MCAFEE, Wachusett Nurseries, New Bedford, Mass.

Answers to Correspondents.

(C. A., Paris, C. W.) We think the Osage Orange will be hardy enough for you, and if so, we would recommend it. Next to it the Buckthorn, whose chief defect is the want of a sufficient number of thorns. The native varieties of the Hawthorn that grow in your woods, will also make a good hedge if well managed.

* This proves synonymous with *Chasselas Musqué*.

The Syrian Grape may be had of any of the principal nurseries. See our advertizing columns.

The Fabiana is quite easily propagated by cuttings of the young wood placed in sand or very sandy earth. They will root quicker and surer if covered with a bell-glass.

(A. M., Bethany, Va.) You will find the address of most of the leading nurserymen in the advertizing columns of the *Horticulturist*. We do not know that we could prepare a more complete list if we should set about it.

(J. E. H., Indianapolis.) Hedge with Osage Orange by all means. It succeeds well, we understand, in your climate.

We would advise the Pears, Apples, and Cherries to be dwarfs or pyramids. Plums, Peaches, and Quinces cannot be dwarfed so successfully, and may therefore be grown as standards.

(A. Novice, Galesburgh, Mich.) You will find a description of the Wardian Case in the *Horticulturist*, volume 2, pages 405 and 406. We may reprint it at some convenient opportunity.

(V. A., Pleasant Ridge, Ill.) *Parsons' Treatise on the Rose* is the most complete that has been published in this country. *Buist's Rose Manual* may be consulted with advantage—a cheap, practical work.

(J. L. M., Holyoke, Mass.) We will carry out your suggestion as soon as may be convenient.

(A Subscriber, Dayton, O.) Twelve best Verbenas—*Scarlets.*—Robinson's Defiance and Chauviere. *White.*—Hovey's America. *Rose Color.*—Kossuth (Sayers'), and Magnificent (Jackson's). *Variegated.*—Eclipse (Henderson's) and Madame de Gournay. *Dark Colored.*—Jenny Lind—maroon, and Miss Baldwin—bluish lilac. *Varieties with eyes.*—Adele, British Queen, and Madam Clouet.

These do not include any of the *new* ones advertised for 1853.

A lady correspondent at Sag Harbor forgot to give us her name, and therefore her requests cannot be complied with.

Protecting Fruit from Birds.—Will you please through the columns of the *Horticulturist* give some method of protecting choice fruit from birds, as it may be of benefit to many of your subscribers. Last summer I had some fine strawberries on newly planted *Prince Alice Maud* vines, (a strawberry that promises to succeed well in this region,) but was deprived of getting more than the first three or four that ripened. The common cat bird was the one that did the stealing—and did it well, too, for I watched with my gun and shot several and caught two in steel traps, and hung cloths about over the fruit, but all of no avail. Jno. G. R. Kalb.—*Lovettsville, Loudon county, Va.*

Some people say that shooting the first depredators frightens the others. Strawberries, and other small fruits, may be protected with nets, and so may dwarf cherry trees.

Four best Evergreens for Cemetries.—In the March number of the *Horticulturist* you have answered your Illinois correspondent's question as to the "six best evergreens." Will you now please name the four best evergreens for planting in cemetery lots, where large size would not be so desirable as the qualities of beauty of foliage, quick growth and hardiness. H. F.

We can recommend the Norway Spruce, Hemlock Spruce, Red Cedar, and Siberian Arbor Vitæ, as four distinct beautiful hardy trees, of tolerably rapid growth. The *Juniperus excelsa* (Fall Juniper), and *Juniperus Hibernica* (Irish Juniper), as also the Swedish Juniper, are beautiful small trees, hardy here.

Lice on Apple Trees.—In the last number of the *Horticulturist* I noticed a cut showing a species of insect that infests the apple tree. Enclosed I send you another specimen of a "different breed." It is increasing on the trees in this section, and I have seen many trees so completely covered that it was impossible to see the *bark* on any part of it. Examined with a microscope late in the spring, numerous insects can be discovered under each one of the *scales*. What becomes of them as they grow up, this deponent knows not—whether they are a creeping or flying animal—nor how they spread themselves. But I wish to inquire if you are troubled in like manner in New York, (I am inclined to think that those on my trees were imported from Buffalo, whence the trees came,) and if so, what remedy you use to extirpate the creatures. Last year I washed my trees with soap and water, and I thought it did them good, but this spring they are more plenty than ever. I think some of trying very strong lye on those most affected and will try the experiment on one of them with strong tobacco water. If you can give us any useful information touching the premises, your subscribers in this vicinity will be very much obliged. Josiah Bond.—*Kenosha, Wis.*

The insect referred to is the *apple tree bark louse* (*coccus*). You will find it described fully in *Harris' Treatise*, pages 221, 222, and 223, new edition. The following efficient remedy is given in that work: "A wash made of two parts of soft-soap and eight parts of water, with which is to be mixed lime enough to bring it to the consistence of thick white-wash." This to be applied with a brush, early in June, when the insects are young and tender. A wash made of two pounds of potash in seven quarts of water, and another, made of a quart of common salt in two gallons of water, are also recommended. The first we know to be effectual, when applied well at the proper time; the others, we have no doubt are equally so.

Will you oblige me with answers to the following queries in the next number of the *Horticulturist?*

Is there any species of Weeping Willow that is hardy enough to resist the cold of this latitude? I find that nearly half or more of the last year's growth upon one standing in my yard is dead. (1.)

May a hedge formed of young hemlocks be cut and trimmed without damage, as one of buck-thorn might be? (2.)

Will you mention three or four hardy climbing plants, suitable to train up against the posts of a veranda, such as are of vigorous growth? (3.)

If there is no willow that will be proof against the frost of this climate, will you please name a tree that may be an appropriate substitute for it that is hardy. A Subscriber.—*Shrewsbury, Mass.*

(1.) The new American Weeping Willow, from Europe,—a charming, hardy, weeping tree.

(2.) Nothing bears the shears better than the Hemlock.

(3.) The Chinese Wistaria; the *Bignonia radicans*, or trumpet flower; the Scarlet Monthly, or Coral Honeysuckle, or Monthly Fragrant Honeysuckle; the *Aristolochia Sipho* (Birthwort); the American Ivy (*Ampelopsis*); and the *Periploca*, or Virginia silk, are fine hardy climbers. To these we may add the Ayrshire and Prairie Roses.

Proper Season for Pruning Shrubbery.—Will you have the kindness to inform me through the columns of your *Horticulturist* the proper season for transplanting and pruning shrubbery? Also, for transplanting native forest trees?—likewise the proper season for pruning and lopping, or topping, the native forest trees? Thomas Fisher, 3d.—*East Brook, Lawrence county, Penn.*

Shrubs may be pruned lightly, to improve their form, at any time. Transplanting and lopping native forest trees, any time from the fall of the leaf to the middle of April, in your climate.

Water Pipes.—An article in the *Horticulturist* in reference to a supply of water for the garden, &c., has induced me to inquire what is the best method of bringing water in pipes? In the Patent Office Report for 1849–50 is a communication in regard to pipes of hydraulic cement, describing the manipulations to be performed in its construction. If you know about the cost as compared with lead or wood—also as to its durability, you would confer a favor by giving us an article on the subject. I understand that pipes of cement have been used in Western New York many years. Abiel Briggs.—*Sharon.*

Horticultural Societies.

Pennsylvania Horticultural Society.—The stated meeting of this Society occurred in the Chinese Saloon, Philadelphia, on Tuesday evening, March 18th, 1853, the President in the chair. The sudden change from mild to severely cold weather, precluded the imposing display of large Azaleas, Rhododendrons, and fine green-house plants usual at the March meeting; yet those who attended were amply repaid with the sight of many interesting plants, and beautiful cut flowers, in the tasteful designs, baskets and bouquets, shown. Mr. J. F. Knorr's gardener, from West Philadelphia, exhibited a dozen of choice blooming plants, six pots filled with Hyacinths, and the following new kinds: *Tempeltonia glauca, Abutilon Vanhouttii, Azalea alba striata, A. exquisita;* Cinerarias, *Carminata, Vicar of Wakefield, Formosa, Mrs. Sydney Herbert, Marianne,* and *Amie Robsart.* Mr. Cope's gardener brought a dozen select standard plants, a collection of Cinerarias, and two species shown for the first time—*Rhodostemma gardenoides,* and *Hypocyrta strigillosa.* Peter Raabe, a large vase with a great number of blooming Hyacinths—a rich show.

On the fruit table were seen a small basket of Strawberries from Mr. Cope's houses; *Easter Beurré* Pears, from Thos. Hancock; *St. Germain* and *Nouville & Esperin* Pears, and *Reinette franche* Apples, from Mrs. J. B. Smith; and *Newtown Pippin* and *Carthouse* Apples, from Robert Cornelius. Also, two large collections of vegetables from R. Cornelius and C. Cope.

The following premiums were awarded:

Azalea—For the best grown specimen to Thos. Meghran, gardener to Robert Cornelius. *Plants in Pots*—For the best twelve specimens to John Bell, gardener to J. F. Knorr; for the second best to Thomas Meehan, gardener to C. Cope. *New Plants shown for the first time.*—To Thomas Meehan, gardener to C. Cope, a premium of two dollars for *Rhodostemma gardenoides* and *Hypocyrta strigillosa.* The attention of the Society was particularly called to the new plants shown by Mr. Knorr's houses, *Tempeltonia glauca, Azalea alba striata, A. exquisita, Abutilon striatum Vanhouttii,* and a fine collection of Cinerarias, *Carminata, Vicar of Wakefield, Formosa, Mrs. Sydney Herbert, Marianne,* and *Amie Robsart.* And for an American seedling Camellia, a fine double white, the silver medal to John Sherwood. *Boquet Design*—For the best to Thos. Meehan, gardener to C. Cope; for the second best to Thos. Meghran, gardener to R. Cornelius. *Basket of Cut Flowers*—For the best to Thos. Meehan; for the second best to A. Hall, gardener to D. Rodney King; and a special premium for a basket to Thos. Meghran; and another to Peter Raabe, for a large pyramid of Hyacinths.

By the Committee on Fruits—*Pears*—For the best ten specimens, the *Easter Beurré,* to Thos. Hancock. *Apples*—For the best ten specimens, the *Newtown Pippin,* to Thos. Meghran; for the second best, the *Reinette franche,* to F. Guoin, gardener to J. B. Smith. And a special premium to Thos. Meehan, gardener to C. Cope, for a basket of *Hovey's Seedling* Strawberries.

By the Committee on Vegetables—For the best and most interesting display by a private gardener, to Thos. Meghran, gardener to R. Cornelius; and for the second best to Thos. Meehan, gardener to C. Cope.

Ad Interim Report.—The Fruit Committee respectfully report: That since the last stated meeting of the Society, they have received and examined specimens of the following varieties of Fruits:

From Charles Kessler—*The Reading.*—This valuable winter Pear has been noticed in several of our ad interim reports. The present specimens, which were eaten on the 11th inst., have strengthened the favorable opinion previously expressed by us, of its merits.

The Keim—which we have previously described, appears to be a late keeping winter Apple, assuming a more beautiful waxen appearance with the advance of the season.

Evening Party—This is the third time this delicious little Apple has been submitted to our examination, during the present season. Each successive trial has served to confirm our estimate of its value.

The Orange—A medium sized native Apple, from the garden of Nicholas Lot, of Reading. The original tree, which stood on the adjoining premises, is now dead. The fruit is roundish, slightly oblate, faintly ribbed, of a warm yellow color, approaching orange; Stem short and thick; cavity open, shallow, obtuse, irregular; basin shallow, wide, plaited; flesh yellowish, with a slight orange tint; flavor sprightly; quality "good."

The Ohlinger—A native Apple of Pennsylvania. It originated with Mr. Ohlinger, in Alsace township, Berks County. It fruited in 1852 for the first time. Fruit below medium size, roundish, waxen yellow, with a pale brownish cheek containing many white spots with usually a russet speck in each; stem three-quarters of an inch long, slender; cavity deep, wide, russetted in rays; basin wide, shallow, furrowed; seed brown, short, broad, roundish ovate; flesh yellowish white, fine texture, sprightly flavor; quality "good."

The Dumpling—A large, roundish, oval yellow Apple; stem short; cavity contracted, shallow; basin narrow, rather deep. This is entirely distinct from the *Dumpling* of Coxe, and is a good deal cultivated in some parts of Pennsylvania for culinary purposes.

The Alsace—A seedling Apple of Alsace township; size medium; form conical; skin whitish yellow, with a pale blush on the exposed side; stem short, slender; cavity narrow, acuminate; basin deep, open; flesh whitish, fine texture, juicy, pleasant flavor; quality "good." Though eaten on the 12th of March, it is said to be in eating order in September.

The Fallenwalder or *Fornwalder*—The *Fallawater* of Downing—A large, yellowish green Apple, with a brown blush, uniformly fair, and of "good" quality. It is abundant in our markets, and at this season of the year the largest Apple to be found there.

From W. Boas, of Reading—*The Krouser*—This Apple has been described in a previous report, and is represented as being wonderfully productive.

From Caspar Hiller—*The Hess*—A native Apple of Conestoga, Lancaster Co., Pa. Size medium; form variable, sometimes roundish, often conical; red, in stripes of different hues; stem short, rather stout; cavity narrow, moderately deep, slightly russeted; basin deep, narrow; flesh greenish white, tender; flavor agreeably aromatic; quality "very good."

Five gentlemen were elected resident members.

On motion adjourned.

THOS. P. JAMES, *Recording Secretary.*

A communication on the sexual character of the plants of *Hovey's Seedling* strawberry, by Thomas Meehan, was read before the Society, which we shall publish next month.

Detroit Horticultural Society.—The annual meeting of this Society was held on Monday evening, March 14th, when the following officers were elected for the present year:

President.—Wm. Adair.
Vice Presidents.—J. H. Jones, M. H. Webster.
Recording Secretary.—B. M. Davis.
Corresponding Secretary.—T. H. Hinchman.
Treasurer.—N. B. Wesson.

COLUMBUS HORTICULTURAL SOCIETY.—At the annual meeting of the Society, held March 5th, 1853, the following officers were elected for the ensuing year:

President.—BENJAMIN BLAKE.

1st Vice President.—ALEX. E. GLENN.

2d Vice President.—ANTHONY H. LAZELL.

Corresponding Secretary.—HENRY C. NOBLE.

Recording Secretary.—GEORGE G. COMSTOCK.

Treasurer.—JOSEPH H. RILEY.

Council.—FRANCIS STEWART, C. P. L. BALDWIN, J. WM. BALDWIN, and the President and Treasurer, *ex officio.*

Garden Committee.—JOHN MILLER, for five years.

A few specimens of fine fruits and flowers were exhibited, and several members expressed the opinion that thus far the prospects are good for a good crop of all the various fruits, and feel much encouraged to proceed in the labors and objects of the Society, and express the hope that they will have the aid of citizens generally, in prosecuting the laudable objects of the Society.

HARTFORD COUNTY (CONN.) HORTICULTURAL SOCIETY.—At the annnal meeting of the Hartford County Horticultural Society, held April 2, 1853, the following gentlemen were chosen as officers for the year, viz:

President.—WILLIAM W. TURNER.

1st Vice President.—HENRY MYGATT, Farmington; 2d do, JOHN M. NILES, Hartford; 3d do, Dr. J. S. BUTLER, Hartford; 4th do, HENRY W. TERRY, Hartford; 5th do, CHARLES L. PORTER, East Hartford; 6th do, NOAH W. STANLEY, New Britain; 7th do, WM. G. COMSTOCK, Wethersfield; 8th do, NORMAN PORTER, Berlin; 9th do, E. A. HOLCOMB, Granby.

Recording Secretary.—Dr. GURDON W. RUSSELL, Hartford.

Corresponding Secretary.—THOMAS R. DUTTON, Hartford.

Treasurer.—ERASTUS SMITH, Hartford.

Auditor.—H. L. BIDWELL, Hartford.

Standing Committee.—Alfred Smith, Wm. W. Turner, Dr. H. A. Grant, P. D. Stillman, Joseph Winship, George Beach, Jr., Dr. J. L. Comstock, Dr. Gurdon W. Russell, J. H. Goodwin, H. W. Terry, E. A. Whiting, H. L. Bidwell, Charles L. Porter, Henry Affleck, Daniel S. Dewey, John M. Niles, Dr. George B. Hawley, George Affleck, Charles T. Webster.

RHODE ISLAND HORTICULTURAL SOCIETY.—At the annual meeting of the Rhode Island Horticultural Society, the following named gentlemen were unanimously elected officers for the ensuing year:

President.—JOHN J. STIMPSON.

Vice President.—WILLIAM S. PATTEM.

Treasurer.—GILBERT CONGDON.

Corresponding Secretary.—J. KINGSBURY.

Recording Secretary.—JOHN F. DRISCOL.

Executive Committee.—W. S. Pattem, W. M. Snow, C. B. Manchester, James Eldred.

Fruit Committee.—Stephen H. Smith, Owen Mason, Geo. B. Peck, John J. Stimpson, E. Bills Pitcher, Lewis Dexter, James Eldred, D. H. Leonard, Silas E. Moore, John Holden.

Flower Committee.—Geo. Hunt, Richard Daglish, Levi Medcalf, Wm. Nesbit, W. H. Dyer, Geo. Anderson, A. Forsyth, Daniel E. Carpenter, W. M. Snow.

Vegetable Committee.—Geo. L. Clark, S. B. Haladay, A. Reed, W. Vial, J. Palmer.

Auditors.—James Y. Smith, Elisha Dyer, Jr.

P. J. Redouté del. Gabriel sculp.

Small Magnolia *or* White Bay.

Magnolia glauca.